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BARTLETT SCHOOL OF PLANNING

Rail Transport and Urban Development:
Regeneration opportunity for Whitechapel as a result of the
realization of Crossrail and Overground Orbirail

by
Vasiliki Masen

Dipl.Arch
Aristotle University of Thessaloniki, 2006

Being a Report submitted to the faculty of The Built Environment as part of the requirements for the award of the MSc Urban Regeneration at University College London:
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ABSTRACT

The Report examines the regeneration opportunity of Whitechapel, London in relation to the nodal upgrade resulting from the future rail infrastructure of Crossrail and Overground Orbirail.

The Report is divided into two distinctive parts. In the first part I develop the theoretical framework based on the networked city theory and the polycentric mega-city region. I demonstrate both the importance of a rail network within the mega-city region and its direct impact on the urban development. The nature of train station areas as both nodes and places in the city, is discussed generally and then within the specific context of London.

In the second part, the theoretical framework is applied to the case study of Whitechapel, identifying future opportunities for urban regeneration. The issues of transport infrastructure, urban development and community politics within the mega-city region are addressed through the study of Whitechapel. This particular case study is explored not only as an important future node and in terms of its subsequent urban development, but also as a place in the London mega-city region that is already undergoing an important urban transformation.

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"A new phenomenon is emerging in the most highly urbanized parts of the world: the polycentric mega-city region (MCR). It arises through a process of very extended decentralization from big central cities adjacent smaller ones, old and new. [...] These places exist both as separate entities and as parts of a wider functional urban region (FUR) connected by dense flows of people and information carried along motorways, high-speed rail lines and telecommunications cables. It is no exaggeration to say that this is the emerging urban form at the start of the 21st century".

(Hall and Pain, 2006:3)

The globalization of the economy has led to significant urban restructuring. Parallel processes of (re)concentration and decentralization, which can be understood within the notion of the networked city, rather than a crude dichotomy between centre and periphery, has resulted in the organization of metropolitan space around activity nodes connected through material (transport) and immaterial (information) networks. In this context the role of transport in the global city assumes a highly significant role.

Material city gateways, i.e. airports, railway stations and seaports, are not only nodes in the transport network they also have an urban dimension. Whether this is strong or weak depends on the nature of the network. Train station areas have an intense urban identity characterized by a plethora of overlapping activities. In the context of urban restructuring, railway stations and their surrounding areas are in the epicentre of significant urban redevelopment, with the place dimension of the transport node becoming increasingly important.

The importance of urban restructuring is closely related to that of the node within the rail network. A fundamental distinction in the railway network is between the inter-metropolitan and intra-metropolitan scale. Within the intra-metropolitan scale, the regional scale is highly significant, as investment in it has become a necessity for the mega-city regions to sustain their growth. Likewise, orbital rail links are equally important for the prosperity of outer centres in mega-city regions.

In order to understand the nature of the resulting urban development, institutional change in the context of deregulation should also be examined. Privatization policies in transport (whichever form they may assume) have increased interest in further exploitation of train station areas, where office development tends to prevail. Nevertheless, redevelopment of parts of inner city for offices is only one aspect of the transformation of the city centre. Simultaneously, it takes place a process of urban gentrification triggered by the expansion of what can be termed 'new cultural landscapes' (Hamnett, 2003) as part of the remaking of inner city.

Globally, London is one of the most significant polycentric mega-city regions, whose future prosperity depends on sustaining its present growth. London's rail transport infrastructure is based on London Underground and a number of regional lines of the former Network SouthEast most of which radiate from the centre. Currently London necessitates an efficient regional rail network and orbital rail links between the suburbs. Thus, two of the most important future developments within transport planning are Crossrail and Overground Orbirail both of which are bound to change the mental map of London. Nevertheless, institutional change and privatization policies determined the character of new urban development in the train station areas. These developments exhibit an almost similar pattern of land use.

Since the future Crossrail and Overground Orbirail will intersect at Whitechapel, it is bound to assume critical importance within the London mega-city region. Although Overground is currently under construction, Crossrail's funding problems were only recently resolved. Crossrail is considered the most important rail infrastructure to be built in the future, and involves a new underground tunnel that crosses

the centre and links Heathrow airport with the City of London and Canary Wharf. Nevertheless Crossrail's overall planning has been heavily criticized as not serving the regional scale as much as it should.

At the same time, Whitechapel is a pour inner city area, characterized primarily by high rates of deprivation and unemployment. It is also, like many London's inner city areas, an ethnically diverse community, where the Bangladeshi population prevail. In addition, the tenure structure is heavily based on social rented housing; which is characterized by high percentage of overcrowding and non-decent housing.

The borough's aspiration for the area is multifaceted and reflects the several overlapping and sometimes opposing issues that it confronts. The west edge of the City Fringe is piece by piece incorporated in the City of London. The rest of the area is designated to serve mostly the augmented leisure and CCI cluster. Also the borough focuses on the needs of the existing community and their economic activities.

The new planned projects will render Whitechapel highly accessible. This in relation to the key location of the area on the axis that links the City and Canary Wharf is very likely to have a significant impact on future urban development. Developers are bound to respond to the future nodal upgrade of Whitechapel and exert pressure for further urban development that in all probability will involve office development. Further more, the process of urban gentrification, already detected in the City Fringe, will be intensified.

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conceptual framework

conceptual framework

"A network society is a society whose social structure is made of networks powered by microelectronics-based information and communication technologies. A network is a set of interconnected nodes. A node is the point where the curve intersects itself. A network has no centre, just nodes. Nodes only exist and function as components of networks".

(Castells, 2004:1)

The theory of the network society elaborated by Manuel Castells and the theory of the polycentric metropolis elaborated by Peter Hall provide the conceptual framework and starting point for the present Report. Contemporary social and urban theories converge in the explanation of the new 21st century urban phenomenon, i.e. the networked city or the polycentric mega-city region. These mega-city regions are a manifestation of the new global economy and the informational society.

Within the mega-city region two parallel processes of (re)concentration and deconcentration take place. This progressive redistribution of functions disperses activities within the region and at the same time reconcentrates them at particular nodes within it. Space is organized around specialized activity nodes, connected through material and immaterial networks. The best representation of such a metropolitan space is the network which is constituted of multiple nodes and links. However, this does not mean that an urban hierarchy has ceased to exist. In fact, it is recognizable on a regional scale (Hall and Pain, 2006:12).

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Cities represent complex socio-economic systems and space is the expression of these. In the context of the globalisation of the economy and thus the changing nature of cities, there are a number of fundamental common features that characterize the urban form on a city scale, but notably the wider scale of the mega-city region. Thus, the new urban form is fundamentally and increasingly polycentric. The traditional Central Business Districts (CBD) continues to play a prime role, both economic and symbolic. These are supplemented by secondary CBDs that absorb new services, mainly corporate headquarters and cultural businesses. In addition, more recently, tertiary CBDs or 'internal edge cities' have been planned and developed on old industrial sites to absorb the increasing numbers of informational services. At the same time, cities may also be supplemented by new 'external edge cities', usually on the axes of main transport links (Hall and Pain, 2006). It goes without saying that the implied urban transformation does not follow a single, universal pattern. There is considerable variation depending on the characteristics of historical, territorial and institutional contexts.

Insight into the nature of the networked city can be gained through the notion of "space of flows" and "space of places" and the contradistinction between them. According to Castells "the space of flows refers to the technological and organizational possibility of practicing simultaneity (or chosen time in time-sharing) without contiguity" (Castells, 2004:36). This does not mean that space of flows is placeless. In fact, it is made up of nodes and networks. Space of flows is superimposed on historically developed urban forms and is separated from them.

In contradistinction, "a place is a locale whose form, function, and meaning are self-contained within the boundaries of physical contiguity" (Castells,

conceptual framework

2000:453). In contemporary cities, space of places is increasingly fragmented and disconnected within the large urban agglomeration. Whereas the space of flows is determined in terms of meaning and function by its nodal role in the specific network, space of places forms its meaning and function in relation to the specific locality to which it belongs. However, because "function and power in our societies are organized in the space of flows, the structural domination of its logic essentially alters the meaning and dynamic of places" (Castells, 2000:458).

The structure of mega-cities regions reflects the spaces of flows and space of places and their interrelation. In addition, they are connected both externally to global networks and internally to segments of their own countries. At the same time they are increasingly disconnected from local places and their populations that fail to contribute to their function. In a sense mega-cities are globally connected and locally disconnected. The global increasingly overwhelms the local, in the same way as space of flows overwhelms space of places.

As discussed above, material and immaterial networks define city structure. Thus, transport, one of the material networks, is a key issue in this new global urban condition. Concentrated deconcentration necessitates high quality transport networks to support existing business flow. This presupposes significant public investment in transport infrastructure. In fact, transportation is a prime issue in cities and research points out that transportation problems are set to deteriorate[1].

Airports, seaports and train stations are important nodes in the network. They also act as contemporary gateways to cities. In contrast to all other transport and economic gateways, train stations have a very strong place dimension. This was once also true for the seaports, but now their relocation has led to an impoverishment of their place dimension. Airports are nodes par excellence in the global network. Although ex-urban, they augment their urban facilities with shops, hotels and leisure, in an effort to become more place-like. Unlike seaports which have a weak place dimension and airports which are 'non-places' (Auge, 1995) train stations have a strong innate urban identity.

A train station, no matter the scale of network that it serves (regional or intra-metropolitan) is a node in

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1   As Manuel Castells maintains: "transportation problems will get worse, because increasing activity and time compression allowed by new networking organization translate into higher concentration of markets in certain areas, and into greater physical mobility for a labor force that was previously confined to its working sites during working hours" (Castells 2000:426).

the network. At the same time it is also a place in the city which articulates around it an urban space. This coexistence results in reciprocal interactions. Luca Bertolini and Tejo Spit underline the two natures of the railway station:

> "as a geographical entity, a railway station has two basic, though partly contradictory, identities. It is a node: a point of access to trains and, increasingly, to other transportation networks. At the same time, it is a place a specific section of the city with a concentration of infrastructure but also with a diversified collection of buildings and open spaces".
>
> (Bertolini and Spit, 1998:9)

In other words, in the train station and its surrounding area is where the 'space of flows' confronts the 'space of places'.

The redevelopment of railway stations and their surrounding areas throughout Europe is often an important part of urban restructuring (Bertolini, 1996, 2006; Bertolini and Spit, 1998). Also important is the fact that globalisation brought about fierce competition between cities in order to promote themselves. This had a significant influence on the fabric of cities. Most European cities have a dense urban tissue and a tangible (in terms of built reality) historic dimension that delays globalisation processes or confines them to specific areas. Thus, the most suitable inner city areas for development have been waterfronts and the vicinity of train stations. Waterfronts rise to prominence as leisure, shopping and mixed use districts on account of the decline of the former industrial and transport land use. Conversely, station areas have flourished as important centres for financial activities due to their key location and the advance of rail transport.

Train stations have a favourable position as far as geographical location is concerned. Many are located on the fringe of city centres, often in historical areas which, due to the revitalization in down town areas have assumed a significant position. Thus, areas around transport nodes become the focal point of major redevelopment exactly because of this prominent nodal status. The place dimension of the transport node becomes continuously more important and "a railway station turns into a place to be, not just a place to pass through" (Bertolini and Spit, 1998:35).

However, train station areas have usually been highly problematic and are renowned for gathering 'marginal' activities and populations. They often coexist with light industrial workshops, warehouses and housing services for the working class in the beginning and mostly immigrants and other minorities later (Bertolini, 1996:132). The new developments serve a completely different set of users. The juxtaposition of commuters, tourist and business travellers with the local population render the place a battleground between the opposing stakeholders. Consequently, the integration of new urban developments with the city fabric and the existing community is a necessity.

Transport has a major impact on the spatial and economic development of cities and regions. The attractiveness of particular locations depends in part on their relative accessibility, and this in turn depends on the quality and quantity of the transport infrastructure (Banister and Lichfield, 1995:1). Therefore, in order to understand the interrelation between rail nodes and urban development we should study both the context of the development and the development itself.

1.3.1 RAIL NETWORK

At this point it would be useful to distinguish between different types of rail networks and thus transport nodes, for every train station is of different importance to the network. Each type of rail link, whether it is a high speed train or urban underground, affects development, but in a different way.

The characteristics of railway networks of different scales can be summarized as follows (Ross, 2000:28):

- High speed networks where trains run up to 300km/hour, linking city centres nationally and internationally.
- Extensive intercity networks on which trains run at up to 200km/hour linking city centres nationally.
- Regional networks with more frequent stops. These have timetables for trains that run at regular intervals and offer convenient short to medium distance travel, at speeds of to 100-160km/hour.

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- Urban and suburban networks tending towards a metro-type service, with higher density multiple unit rolling stock, running at speeds of 60-100 km/hour[2].

The urban-suburban scale can be further divided into two levels. The first is represented by pure metro systems, designed to serve dense city centres where the time needed to travel between stations is approximately 4 to 5 minutes, and that are limited to the first two zones of the city-region. The second level is represented by suburban networks. The lines here are fewer, with many branches that cross the centre and extend into the suburban zones. The trains are bigger and the distance between stations is significantly longer than in the metro network. The urban-suburban rail networks in Paris and Berlin are the most representative of this kind (Appendix A).

However, the above mentioned division is not categorical. The transport planning for every urban network also depends on various factors, among them urban density, urban form and historic evolution of the network. What is most important at this point is to emphasize the importance of the suburban and regional scale and its intermodal integration with the intra metropolitan transport network.

In other words, for cities to sustain their growth and deal with the new pattern of living and working, they must invest in longer-distance commuter rail systems. The cities that have achieved this are characterized by Peter Hall as the "best managed cities" (Hall, 1991:88). Thus, within the context of mega-city regions the

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2   Ross is referring to the Britsh rail network. Nonetheless, there are European equivalent networks. For example, Germany's ICE and France's TGV are included in the first category, and Germany's Regio Express belongs to the third.

planning of a regional rail network is twofold: on the one hand it links suburban residential areas with downtown business centres and on the other hand it serves major urban extension in tertiary centres.

Finally, an issue less discussed in academic literature and even less implemented, is orbital rail and links between suburbs either with rail or other modes (bus or tram). Such projects would benefit the growth of sub-centres by improving accessibility between suburbs and promote centres in the periphery. However, it seems that policies tend to promote monocentricity, or at least, emphasis is unevenly placed mainly on the centres.

1.3.2 URBAN DEVELOPMENT

It is widely argued that major new transport infrastructure has a substantial impact on the local economy and the development potential of an area (Banister and Lichfield, 1995:4). What characterizes these areas is high accessibility, proximity to the centre and consequently high flows of people. These characteristics lend a new competitive advantage to the area over others, which in turn results in greater levels of efficiency and productivity. These areas, formerly on the city fringe and usually highly problematic, are now the centre of regeneration projects.

A better insight into the relationship between the node and its urban environment may be achieved in relation to the policy context. In terms of institutional organisation the European Commission strongly endorses the privatisation of national railways (Directive 91/440, in Bertolini and Spit, 1998:7). In relation to the Commission's support for rail transport, this renders the public private partnership in any form as the only feasible option. "The joint developments have become a common practice in many world cities

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locations for office development (Bertolini, 1996; Bertolini and Spit, 1998). Thus, diversity may prevail in land uses but "the high cost of development, coupled with limited public subsidies, is in favour of short-term, high-return property approaches, where offices tend to prevail" (Bertolini and Spit, 1998:40). In Appendix B three European examples are cited that illustrate the direct impact of nodal rail upgrade in urban development.

Furthermore, redevelopment often has a strong symbolic value through the use of architecture, or else, new projects emphasize upon production and consumption of 'symbolic capital' as Bourdieu would put it (Bourdieu, 1977). This is also a very important aspect of the urban restructuring; thus, new developments want to promote their space dimension. Nevertheless, the above cited planning policy and practice results in specific urban environments that tend to be generic in form and functionally detached from their urban environment.

Parallel to this kind of urban development there is also one more important aspect of inner's city fringe area transformation that should be discussed; that is gentrification. This theoretical transition from one process of urban restructuring to another is not easy; as Tim Butler and Loretta Lees point out, "globalisation literature and the gentrification literature have, to date, paid little attention to each other" since "there is little to no detailed empirical that 'fixes' globalisation at the local neighbourhood level" (Butler and Less 2006:470).

Although this is not an attempt to bridging this theoretical gap, it is important to mention that inner city areas and especially those located in the city fringe, have already undergone a process of gentrification, as part of a wider process of change within the post-

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industrial city. In this process, centrally located commercial and industrial property is converted to residential uses. The new inhabitants are middle-class educated professionals that usually enjoy the social attributes of 'city-centre living' (Hamnett and Whitelegg, 2007). Gentrification has two aspects a cultural and an economic-led. Nevertheless, the reconsolidation of inner city areas, affects the local community which in many cases involves relocation of the existing population (Smith, 1996).

1.4.1 LONDON'S RAIL INFRASTRUCTURE

"London's transport infrastructure reflects its long establish history and the successes and failures of recent years to try and equip the Capital with the facilities that it needs to thrive as a worlds city into the twenty-first century".

(Bayliss, 1991:112)

Until the mid 1990s, there were two main railway systems serving London and the South East, the Underground, an urban and suburban metro operated by London Transport, and Network SouthEast (NSE), a suburban and regional rail network operated by British Rail as one of its sectors (**Figure 1.1**). Network SouthEast (NSE) served commuters into London and the South East. Gradual privatisation from 1994 to 1997 resulted in NSE being split into several franchises (Network SouthEast Railway Society, 2006). However, the privatisation of British Rail (BR) failed to deliver the expected benefits in terms of environmental, economic and social goals (Murray, 2001; Shaw, 2000; Wolmar, 2001).

Today, National Rail is the brand used by the Association of Train Operation Companies (ATOC) and it was
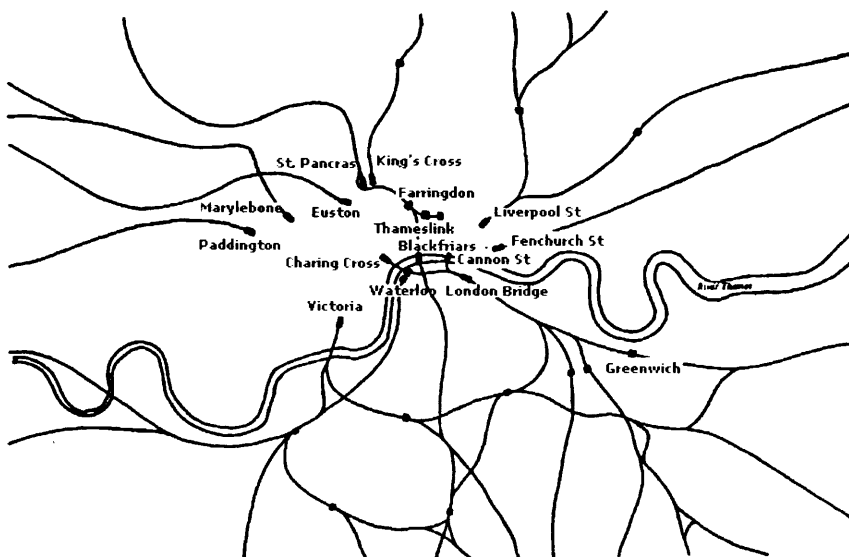
Figure 1.1

The Network SouthEast (NSE) in London (1995). Source: Mackett, 1995:44.

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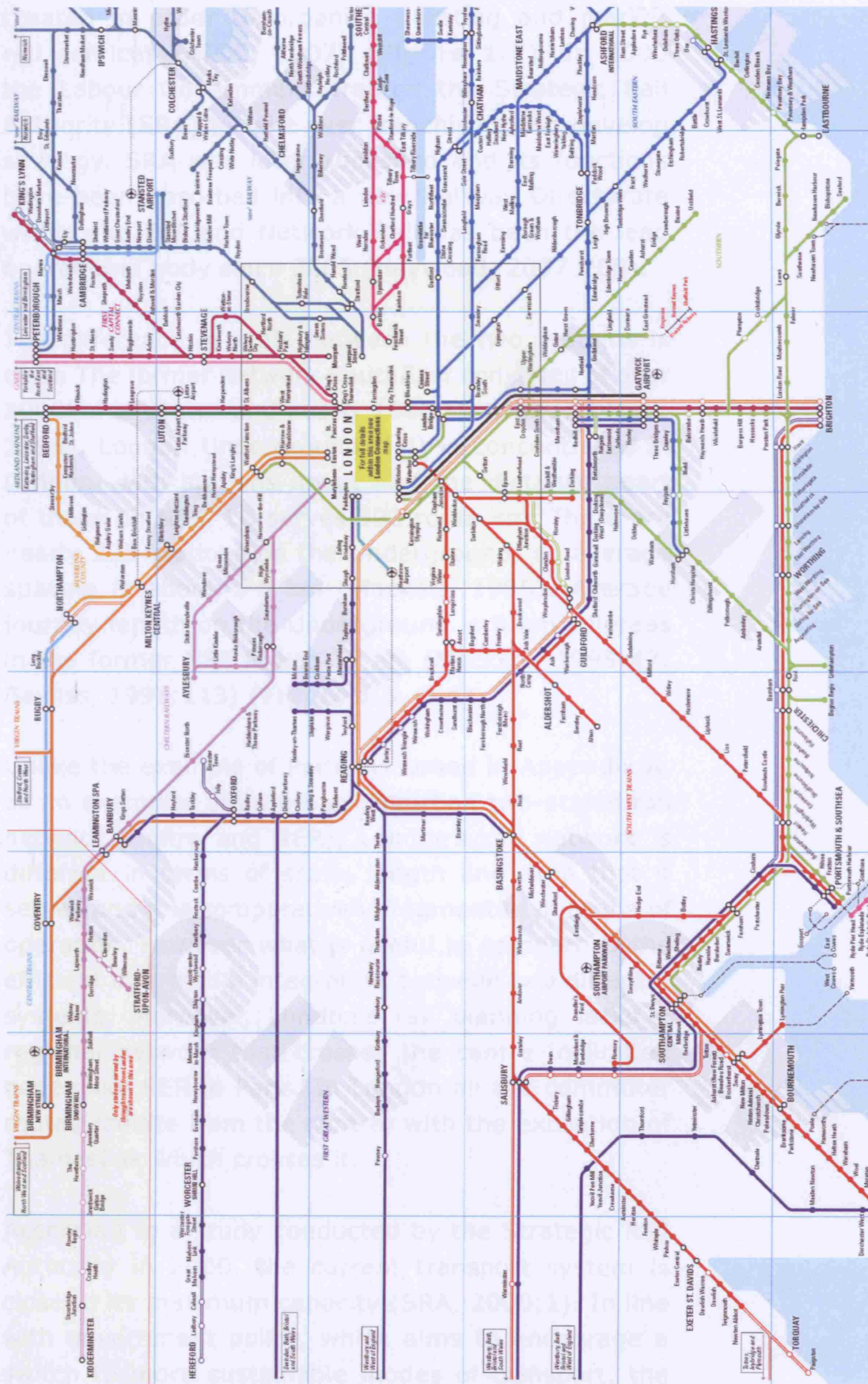
created in order to organise ticketing and market rail services (ATOC, 2007) (**Figure 1.2**). In 2000 the Labour Government created the Strategic Rail Authority (SRA) to take over franchising and develop strategy. SRA was later abolished and its functions have been absorbed into a new Railway Directorate within the DfT and Network Rail has been the lead operational body since 2005 (Haywood, 2007:208).

The difference in scale between the two systems is clear. The former Network SouthEast consisted of over 3000km of routes and nearly 1000 stations (Mackett, 1995). London Underground (LU) is concentrated in London, with stations about half the distance apart of those on NSE. LU serves 392 route km. There are nearly 275 stations on the Underground, so average spacing is about 1-6 km (Mackett, 1995). Average journey length on the Underground is 8 km whereas in the former NSE it was 27 km (Mackett, 1995:47; Bayliss, 1991:113) (**Figure 1.3, 1.4**).

Unlike the example of Paris discussed in Appendix A, as an exemplar of an urban-suburban two-scaled rail network (metro and RER), London's rail network is different in terms of scale, length and area that it serves and it is comparatively fragmented in terms of operation. However what is useful to compare is the efficient intermodal integration between two different systems. Moreover, London's rail planning lacks a regional network that crosses the centre in limited nodes like RER in Paris. In London all the commuter routes radiate from the centre, with the exception of Thameslink which crosses it.

According to a study conducted by the Strategic Rail Authority in 2000, the current transport system is close to its maximum capacity (SRA, 2000:1). In line with government policy, which aims to encourage a switch to more sustainable modes of transport, the

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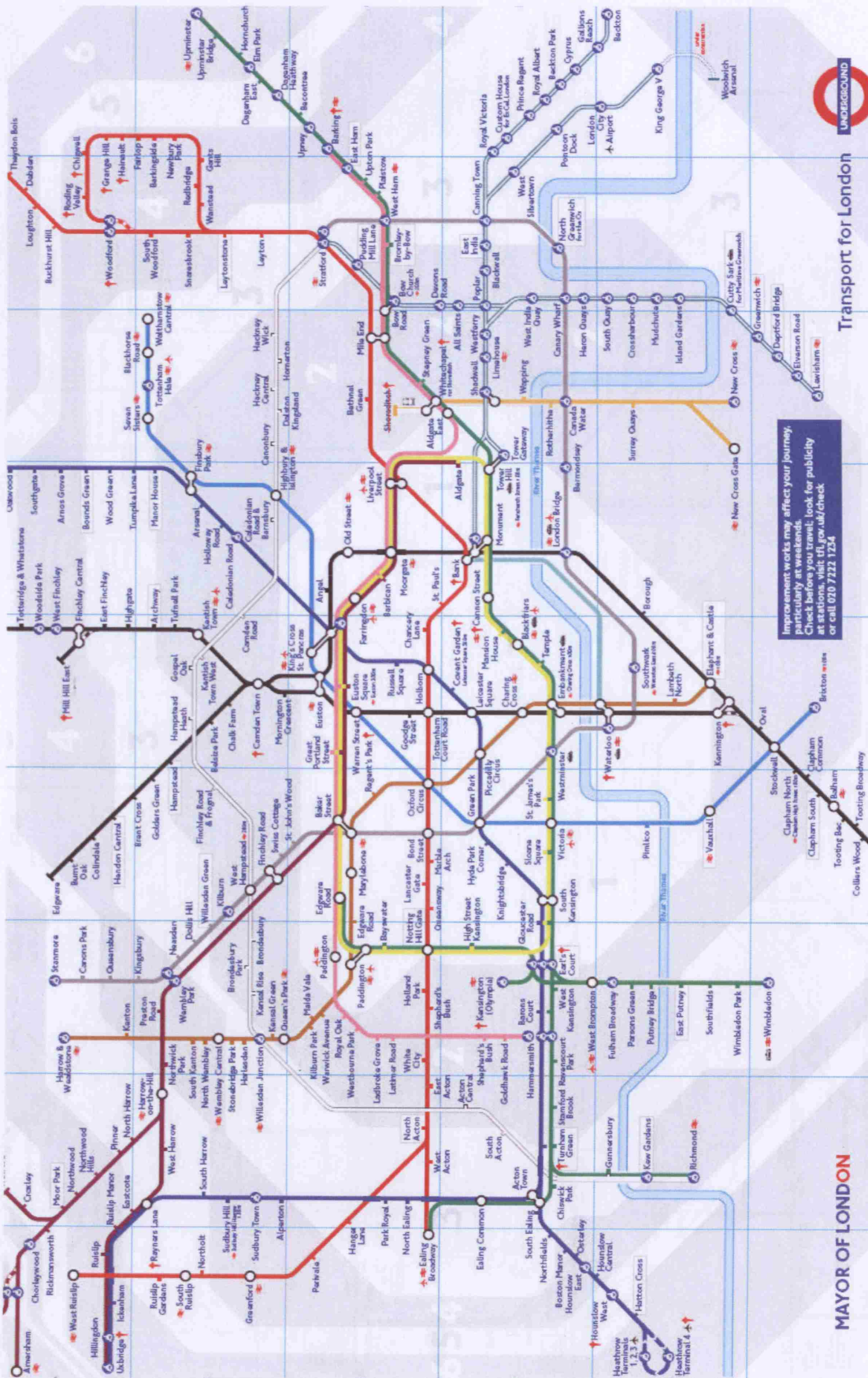
Figure 1.3

Standard
tube map.
Source: TfL.

Transport for London

MAYOR OF LONDON

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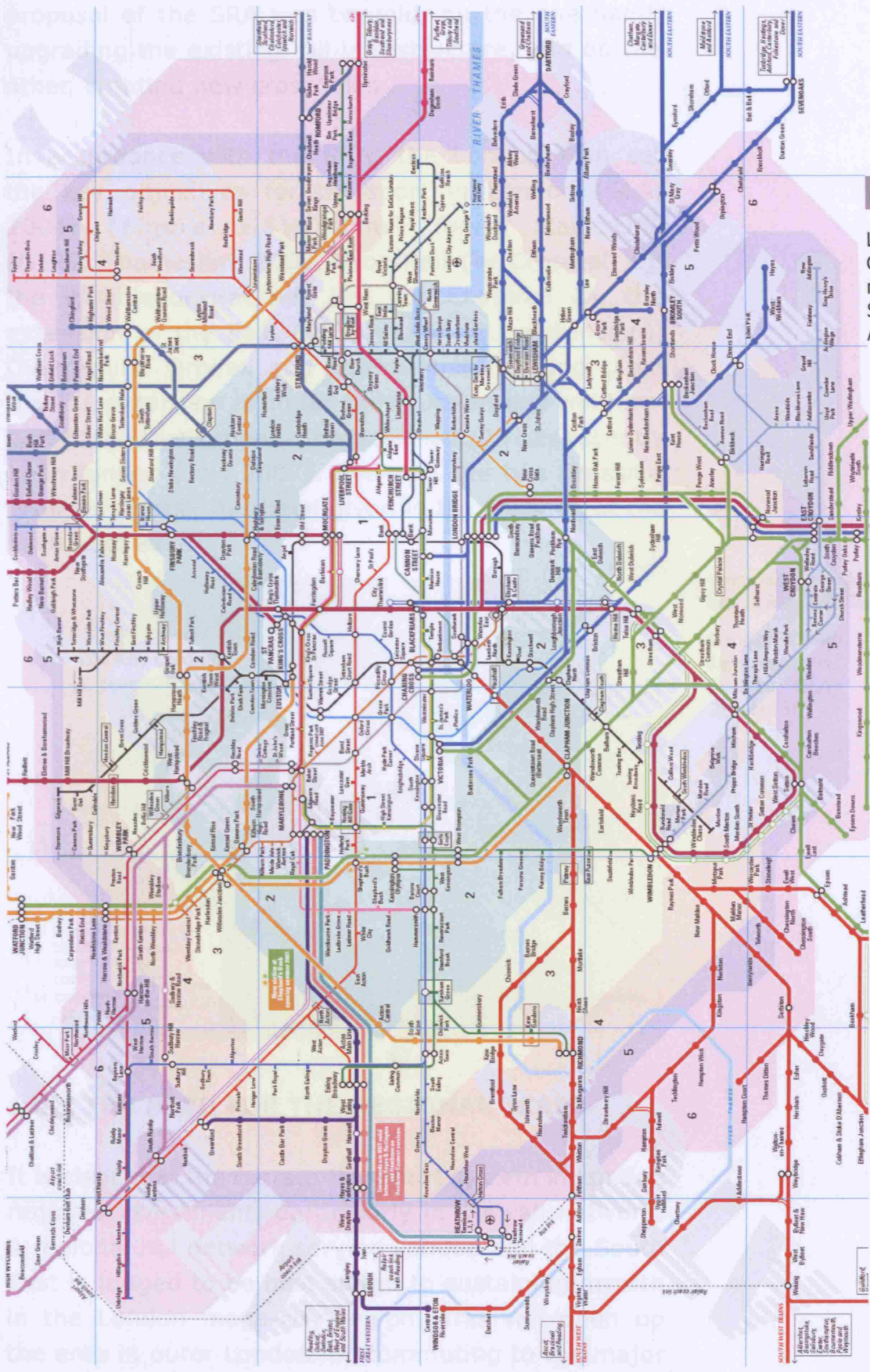
Figure 1.4

London
Connections
map.
Source:
ATOC.

proposal of the SRA was twofold, on the one hand, upgrading the existing rail infrastructure, and on the other, creating new cross lines.

In accordance with the SRA, the London Plan set the key objectives for transport in London (GLA, 2004) **(Figure 1.5)**:Channel Tunnel Rail Link (CTRL) Thameslink 2000, CrossRail (or Crossrail 1), the Wimbledon-Hackney line (or Crossrail 2), the extension of the East London Line (ELL extension), Overground Orbirail and light transit. Among them the ELL extension is under construction and will form part of the Overground. Thameslink 2000 has recently been funded (July 2007). Between the two Crossrail projects priority has been given in the creation of the east-west axis.
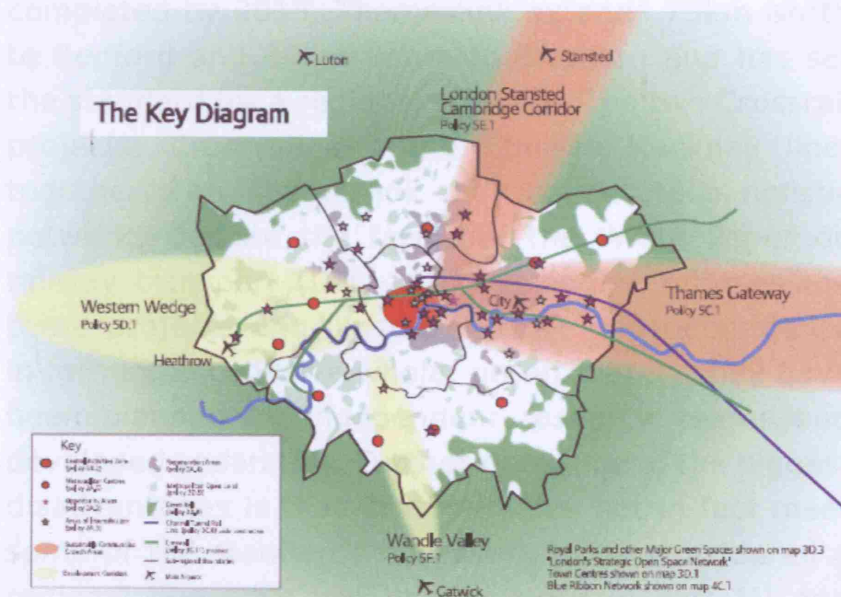
Figure 1.5

London's Plan, key diagram. Source: GLA, 2004b:50.

1.4.2 THE NEED FOR THE REGIONAL SCALE

It is clear that the current transport system in London requires investment, particularly in the rail network. A regional rail network serving London and the South East is judged to be best suited to sustaining growth in the London mega-city region. This will open up the area in outer London for commuting to the major

financial nodes, avoiding the need to interchange, and so reduce congestion at a number of London termini. According to S. J. Alexander the characteristics of an ideal regional rail network for London should be:

> "having no more than five stations in the central area; the stations being double ended and long enough for twelve-car trains; and being joined to at least two lines at each side of the central area to give a wider choice of routes and to permit both all-stations trains and semi-fast trains to operate".
>
> (Alexander, 2002:25)

The North-South regional link has already been realized as part of the Thameslink Programme, which will be completed by 2015. Thameslink extends 75km North to Bedford and 80km South to Brighton and has set the standard for a regional network. The two Crossrail projects, Crossrail and the Chelsea–Hackney line, together with Thameslink may constitute a holistic network. Despite the fact that the White Paper on railway transport (DfT, 2007) strongly endorses the three projects and illustrates their interdependence in forming a cohesive whole, unfortunately they have been planned by independent research teams and developed separately. Furthermore, one of the biggest disadvantages is that Crossrail does not in fact meet some of the standards necessary to be considered a regional line (this will be discussed in Part II) and Chelsea-Hackney line is several years behind.

1.4.3 ORBITAL ROUTES IN THE MEGA-CITY REGION

Despite the importance of the proposed links there are counter proposals as far as transport priorities are concerned. As the critics maintain, growth in transport is unevenly spread. Michael Edwards highlights the importance of improving orbital bus and rail links

between the suburbs, and ranks them as "top priority in transport for London" (Edwards, 2002:33). The existing policy tends to promote monocentricity in London, where key locations such as the City, Canary Wharf and the new Stratford City are prioritized. (Hall, 2006b, 2006c). This is indicative of the fact that there are nearly 20 main lines radiating from London but no orbital public transport capable of providing an effective alternative to the car-based travel that currently dominates the inter-suburban movement in outer London.

However, a good start has been made with Overground Orbirail, which is currently under construction and is due to open in 2010 (phase one). This project will primarily make use of existing infrastructure and consolidate a rail system that already partly exists. This is bound to contribute to relieving congestion in central London. Nevertheless, Overground Orbirail barely meets the objectives of promoting polycentricity in the London mega-city region. The truth is that the greatest emphasis is put on central London and even Overground Orbirail runs close to zone 1, through the middle suburbs and not through the outer ones (Figure 1.6).

The proposal that best promotes the centres in outer London and, thus polycentricity, is Orbinet (figure 1.7). "Orbinet is an outer orbital service connecting the key town centres of London's outer ring identified in the London Plan – Ealing Broadway, Brent Cross, Wood Green, Ilford, Stratford, Bromley, Croydon, Sutton and Kingston" (Hall, 2005:359).

Finally, Peter Hall has proposed a third level of orbital routes (Hall, 2005:358). This involves a phased programme for orbital rail in the South East in order to tie together the fragmented pieces of the inner circuit, 30–50 miles from central London. This has

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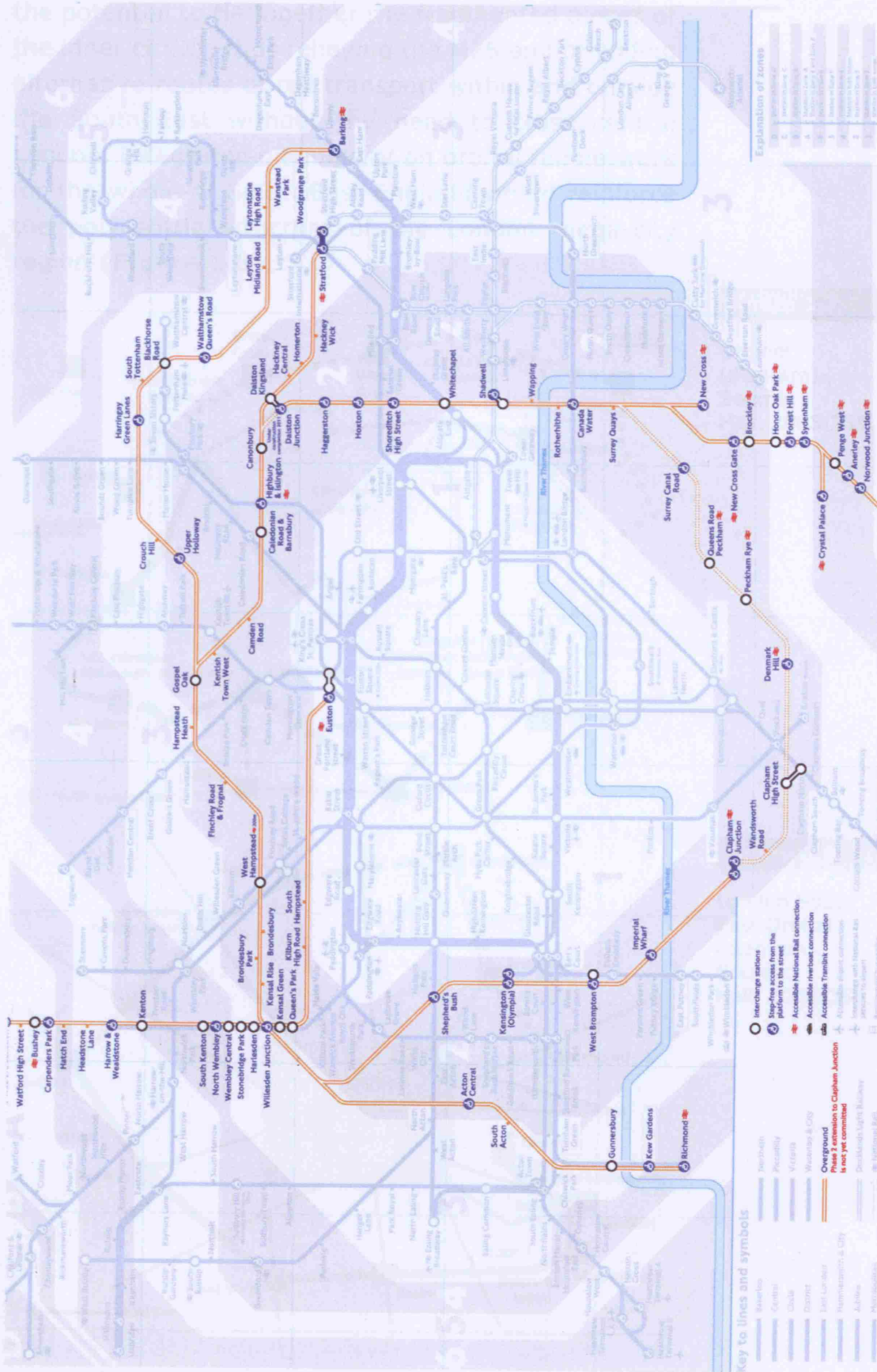
Figure 1.6

Overground
in 2010.
Source: TfL.

the potential to tie together the fragmented pieces of the inner circuit, thus relieving the M25 and providing alternative routes of rail transport within and outside the South East without the need to cross central London. Integrated planning of an orbital rail network for the whole of South East England would reinforce the polycentric structure of the London mega-city region (**Figure 1.8**).
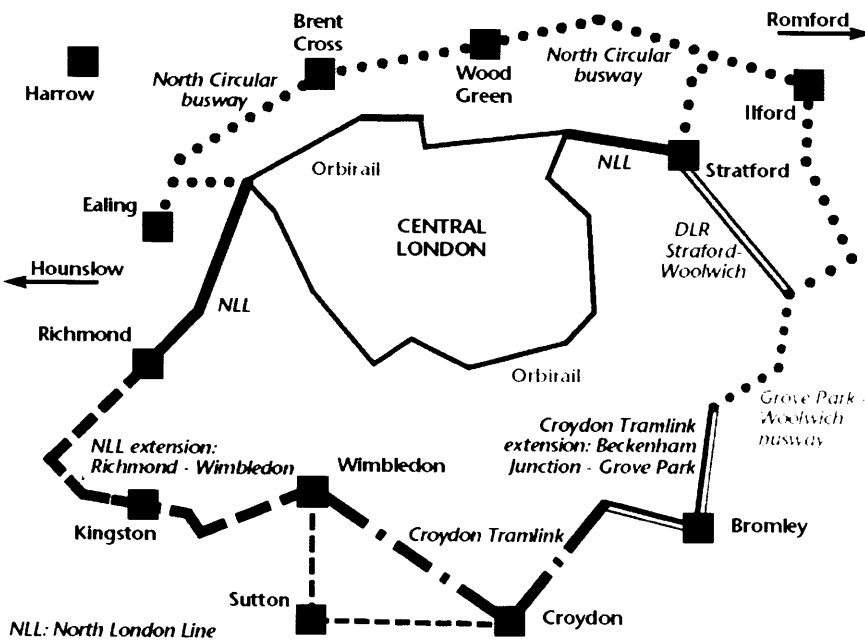
Figure 1.7

Orbinet
(diagram).
Source:
Hall, 2005:359.
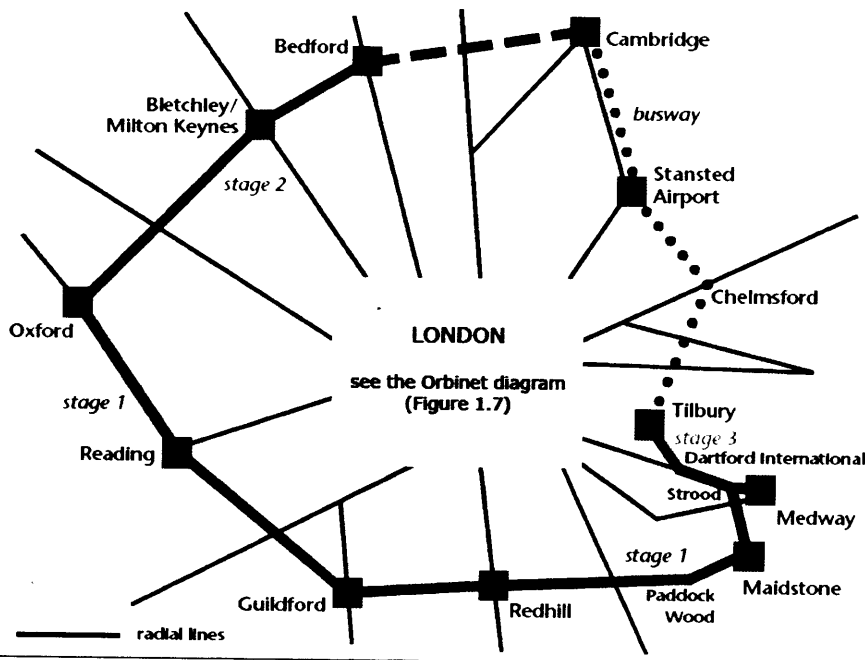
Figure 1.8

London South
East Orbital
(diagram).
Source:
Hall, 2005:359.

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1.4.4 INSTITUTIONAL CHANGE AND URBAN DEVELOPMENT

"Throughout the 1980s the UK government has been pursuing policies of deregulation, competition and privatization in the transport sector. The involvement of the private sector in helping to fund railway developments is a reflection of this".

(Bayliss, 1991:117)

In fact, the issue is becoming increasingly important since national governments and the European Commission look increasingly to the private sector for finance. David Banister and Nathaniel Lichfield argue that:

"most transport infrastructure has been funded through the public sector. But if there are substantial benefits to companies from locating near to new road, railway or airport facilities, there should be some means by which the added value can be captured through development taxes and other forms of exactions [...]".

(Banister and Lichfield, 1995:5-6)

This is based on the fact that developers benefit from the new infrastructure and the subsequent increase in accessibility, although they have not actually contributed directly to the project.

The extension of the Jubilee Underground Line is perhaps the most well known example of this kind. After alteration of the initial plan so as to pass through Docklands, the line was privately funded by the direct beneficiaries, Olympia and York, the developers of Canary Wharf (Bayliss, 1991). This

policy was previously implemented in the 1980s for the extension of the Docklands Light Railway (DLR) from Tower Gateway, where the original terminus was planned to be, to Bank, in the centre of London (Mackett, 1995).

In line with the deregulation policies, British Rail (BR) started searching for ways to complement its revenue much earlier than its European counterparts. Since the 1980s railway stations have been developed in London with a focus on railway land or station air rights primarily in or adjoining the City of London, as office-only complexes (Bertolini and Spit, 1998:182-183). Several London stations fit this profile, including Blackfriars, Cannon Street, Charing Cross, Fenchurch Street and Liverpool Street (Figure 1.9, 1.10, 1.11). In all the above-mentioned cases BR and private developers took the initiative, while local authorities achieved some planning gains (benefits for the local community) in exchange for planning permission.
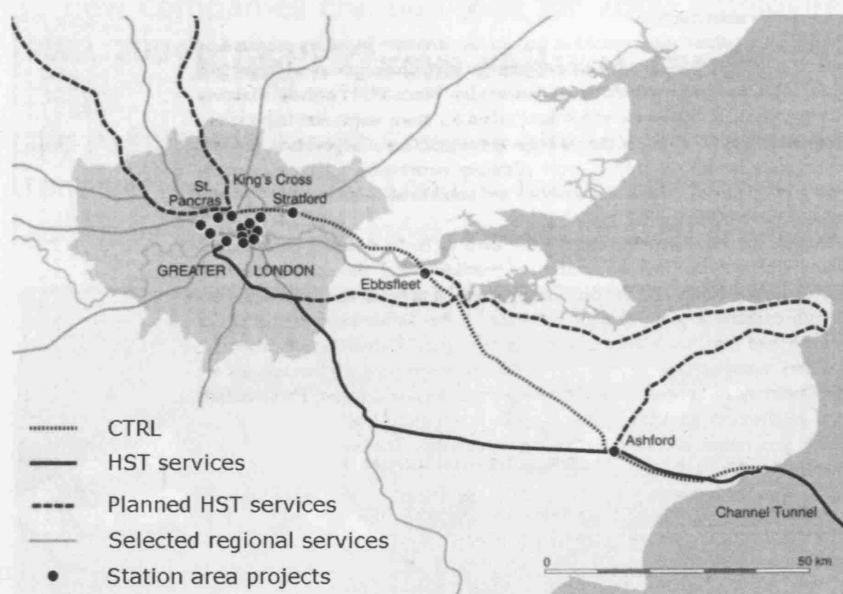
Figure 1.9

Present and future railway network in the South-East and main station area projects (1998).
Source: Bertolini and Spit, 1998:182.

Paddington Waterside is an example illustrating the significance of a nodal upgrade and the remarkable impact this can have on the surrounding area. It is also an

Figure 1.10
1.11

The Broadgate development next to Liverpool Street station. Source: Broadgate Estates.

example of regeneration being used as an investment process where public financing is used in an effort to attract private money. Paddington was already an important node with four tube lines and a train link to the West and South West of England. However, since completion of the Heathrow Express it has assumed even more importance. As the city becomes part of the airport and the airport becomes part of the city (Doak, and Karadimitriou, 2007), this project triggered a major urban development covering over 80 acres. The Paddington Waterside is a mixed used development but offices are the dominant feature with 30 new companies creation jobs for 7000 employees (PWP, 2004) **(Figure 1.12)**.

Like Paddington King's Cross is already an important transport node in the London mega-city region. In fact, it is one of the most intensely used transport

Figure 1.12

The Paddington Waterside development next to Paddington station. Source: PWP, 2004.

interchanges. The decision to locate there the second and main international terminal of the high-speed Channel Tunnel Rail Link, due for completion at the end of 2007, further upgrades the node into perhaps the most important in the London mega-city region. Simultaneously it has rendered the adjacent land the biggest regeneration site in Europe (Figure 1.13), although the redevelopment has been the subject of hard negotiations for almost twenty years between local and central government, the local community, transport operators and property developers. The main argument concerned the need to ensure that in reinforcing London's position as an international financial centre and thus building 4,900,000 sq ft of office space, the crucial social and environmental aspects would be taken into consideration (Argent Group, 2007; KXRLG, 2007).

Figure 1.13

The King's Cross development proposal. Source: Argent Group, 2007.

conceptual framework

In Part I have argued that changes in accessibility resulting from new rail infrastructure significantly affect the urban environment around stations. The new upgraded areas assume a more prominent role in the city region and act as anchors for consolidating metropolitan activities. Such processes of redevelopment are accelerated by institutional changes and thus real estate profits partly define both the context of the development and the development itself. In addition, the importance of regional rail networks to sustaining cities' growth was highlighted. Finally, the general issues arising from the nature of these kinds of development and those particular to London were examined.

PART II: CASE STUDY
REGENERATION OPPORTUNITY FOR WHITECHAPEL

In this part I will examine the regeneration opportunity for Whitechapel as a result of the realization of Crossrail and Overground Orbirail. The potential transformation of Whitechapel will be examined emphasizing both the nodal role of Whitechapel and its place dimension. First, the plans for the nodal upgrade will be examined. Then, the current social, economic and urban conditions of Whitechapel and future plans for the area will be analyzed. This can only be grasped within the wider urban context of Tower Hamlets or even east London, as a whole.

2.1 AN IMPORTANT NODE

Whitechapel is currently an intra-metropolitan node, where three Underground lines intersect (the District, Hammersmith and City, and East London lines) **(Figure 2.1)**. It is also served by five buses to various destinations. Thus, the area is well served by all means of public transport, bus and tube, as well as
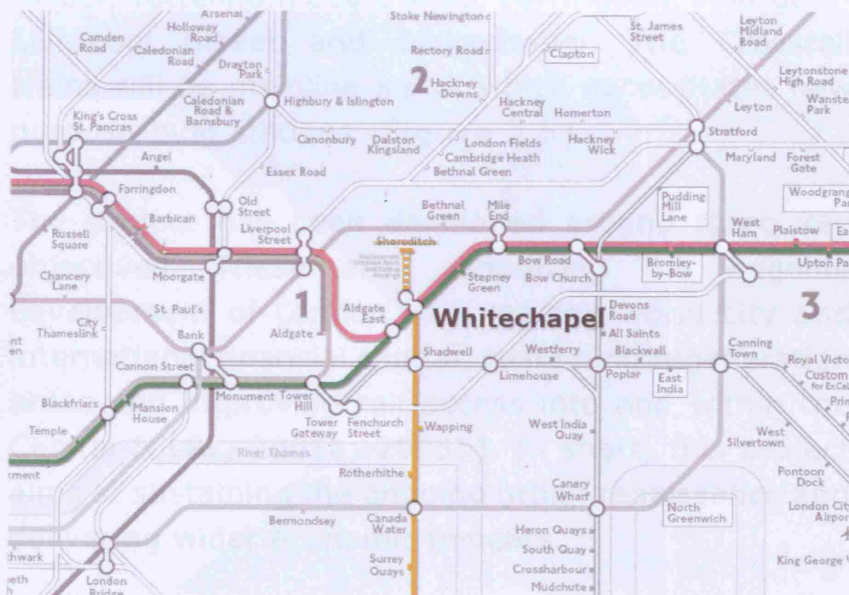
Figure 2.1

Whitechapel, current rail status (District, Hammersmith and City, and East London line), Source: TfL.

car. After the realization of Crossrail and Overground Orbirail it will continue as an intra-metropolitan node, but one of higher significance to the network.

2.1.1 CROSSRAIL: PLANNING, CONSTRUCTION AND OBJECTIONS

Crossrail is the most significant new rail infrastructure project by far. [...] It is the transport spine that will underpin London's areas of most rapid economic growth (TfL, 2006:70).

"The Crossrail project has been developed by Cross London Rail Links (CLRL) which is a 50/50 joint venture company formed by Transport for London (TfL) and the Department for Transport (DfT). CLRL is tasked with promoting and developing a new railway route through London (East-West) from Maidenhead and Heathrow via Paddington, Liverpool Street and Stratford to Shenfield, and via Whitechapel to Abbey Wood" (CLRL, 2006) (Figure 2.2; 2.3; 2.4). The project includes a new tunnel running east-west through central London from Paddington to Liverpool street station. Apart from these stations, in the centre of London, there will be new Crossrail stations at Bond Street, Tottenham Court Road, Farringdon, Moorgate-Liverpool Street and Whitechapel. The Crossrail trains will be mainline-sized, which necessitates new purpose-built stations (Figure 2.5).

The project has been developed around three key objectives. These are: supporting the ongoing development of London as a leading world city and international financial capital, sustaining regeneration areas and improving rail access into and within the Capital (CLRL, 2005a; 2005b). In short, this project aims at sustaining the ongoing urban renaissance and delivering wider economic benefits.
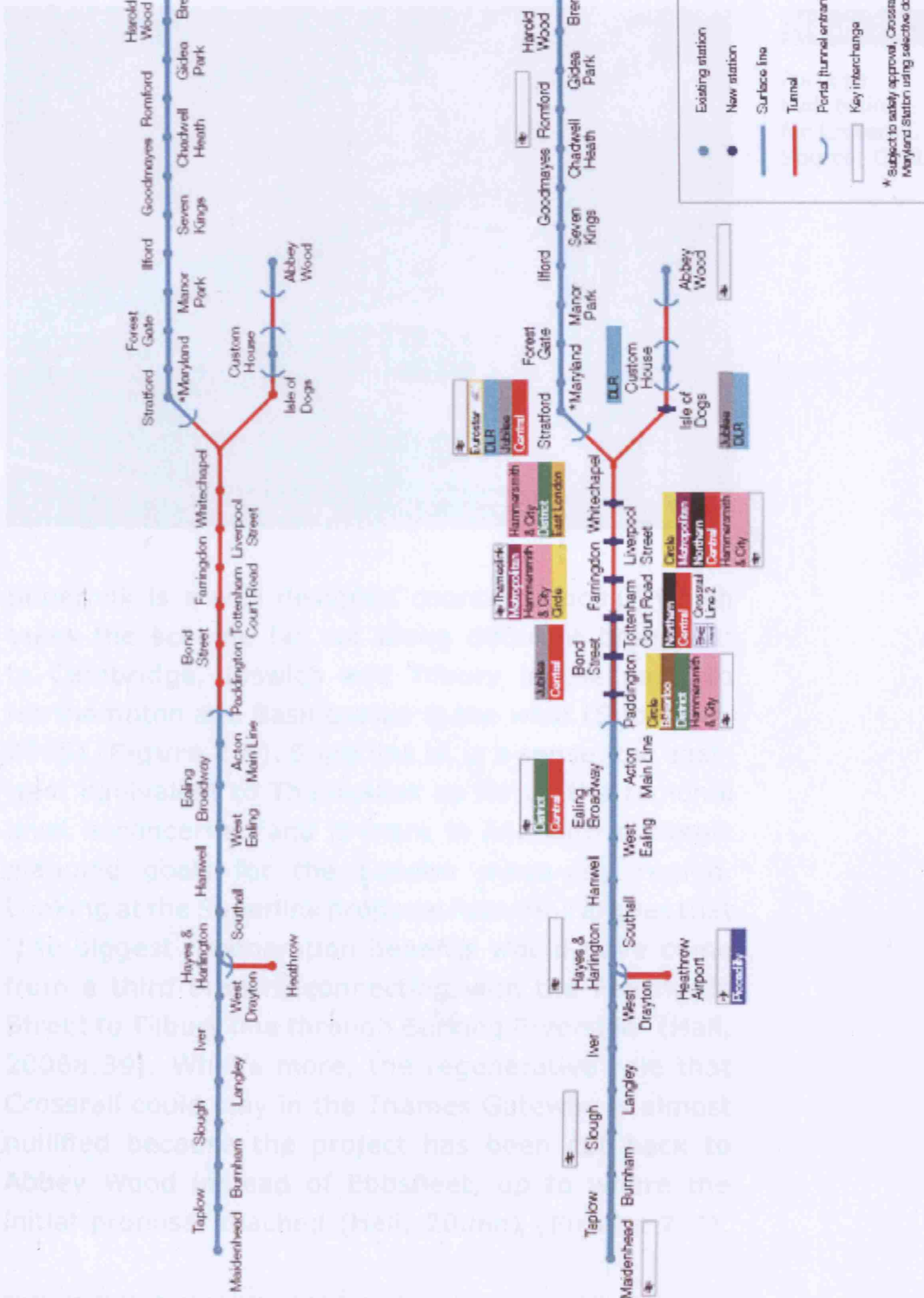
Figure 2.2

Crossrail regional map. Source: CLRL.

Legend

- Existing station
- New station
- Surface line
- Tunnel
- Portal (tunnel entrance and exit)

* Subject to safety approval, Crossrail trains will serve Maryland Station using selective door opening.

Crossrail

Regional Map

Stations: Maidenhead, Taplow, Burnham, Slough, Langley, Iver, West Drayton, Hayes & Harlington, Southall, Hanwell, West Ealing, Ealing Broadway, Acton Main Line, Paddington, Bond Street, Tottenham Court Rd, Farringdon, Liverpool Street, Whitechapel, Stratford, *Maryland, Forest Gate, Manor Park, Ilford, Seven Kings, Goodmayes, Chadwell Heath, Romford, Gidea Park, Harold Wood, Brentwood, Shenfield, Custom House, Isle of Dogs, Abbey Wood, Heathrow

Figure 2.3

Crossrail linear diagram. Source: CLRL.
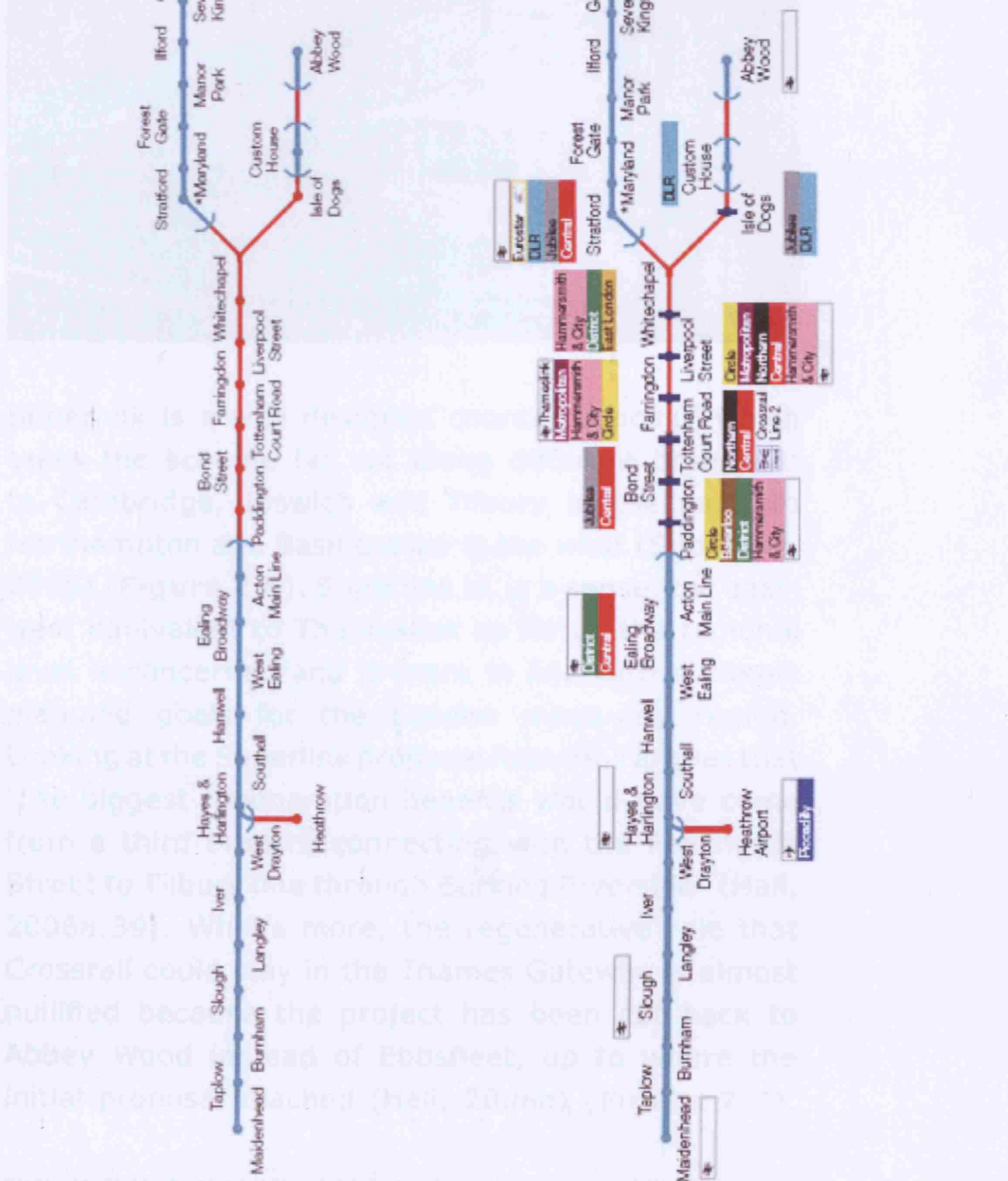
Figure 2.4

Crossrail linear diagram with underground connections. Source: CLRL.

Existing station
New station
Surface line
Tunnel
Portal (tunnel entrance and exit)
Key interchange

* Subject to safety approval, Crossrail trains will serve Maryland station using selective door opening.

length, at approximately 120km, which is almost half the length of Thameslink (225km), makes it more of a tube line than a regional line.

Superlink is a well designed counterproposal[3] which takes the scheme far out along different branches: to Cambridge, Ipswich and Tilbury in the east, to Northampton and Basingstoke in the west (Superlink, 2005) **(Figure 2.6)**. Superlink is, in a sense, the east-west equivalent to Thameslink as far as the regional level is concerned and is more in line with strategic planning goals for the London mega-city region. Looking at the Superlink proposal Peter Hall argues that "the biggest regeneration benefits would have come from a third branch, connecting with the Fenchurch Street to Tilbury line through Barking Riverside" (Hall, 2006a:39). What's more, the regenerative role that Crossrail could play in the Thames Gateway is almost nullified because the project has been cut back to Abbey Wood instead of Ebbsfleet, up to where the initial proposal reached (Hall, 2006a) **(Figure 2.7)**.

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3   Superlink has been promoted by two experienced rail specialists, John Prideaux and Michael Schabas.
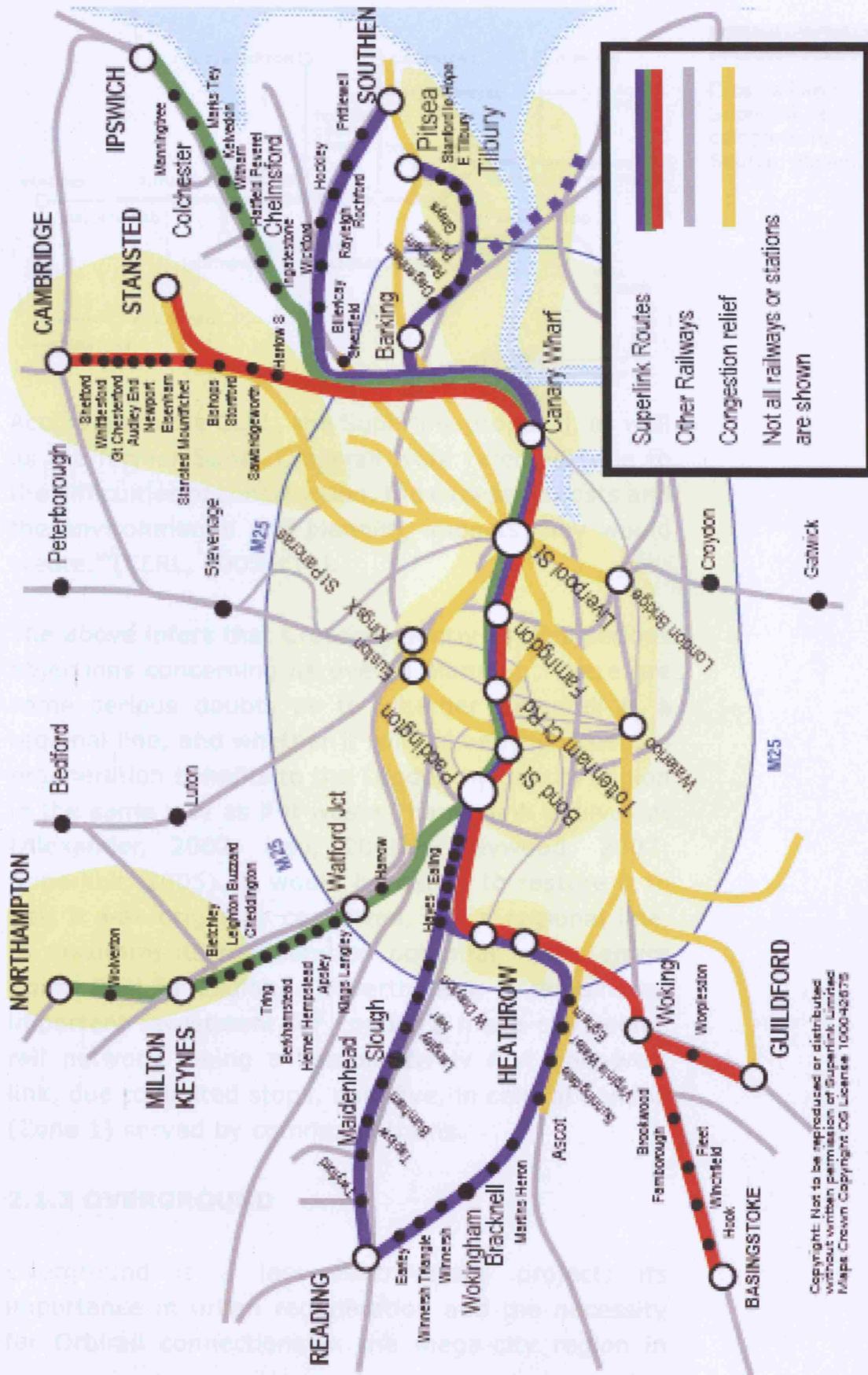
Figure 2.6

The Superlink proposal, Source: Superlink.
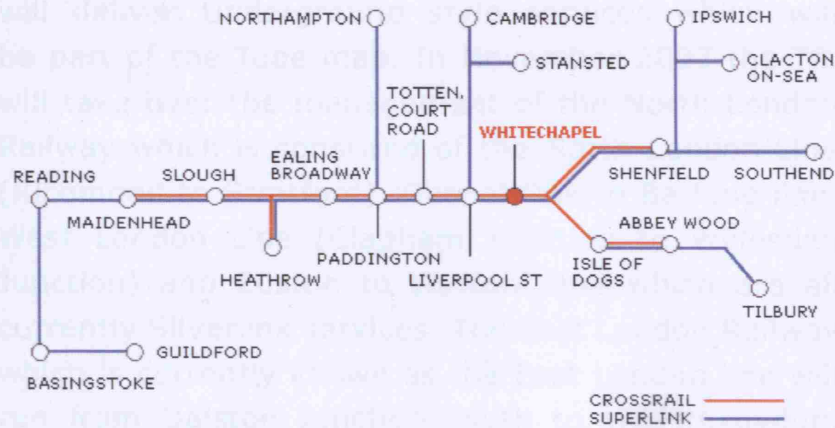
Figure 2.7

Crossrail and Superlink, a comparison. Source: Masen.

According to the CLRL, the Superlink proposal, as well as the former Super Crossrail were rejected "due to the difficulties of construction, the excessive costs and the environmental and planning impacts they would create." (CLRL, 2005a:14).

The above infers that Crossrail rightly evokes serious objections concerning its overall planning. There are some serious doubts as to whether Crossrail is a regional line, and whether it will deliver the expected regeneration benefits to the London mega-city region in the same way as if it was a Thameslink equivalent (Alexander, 2002; Hall, 2006a; Haywood, 2007; Superlink, 2005). It would be better to restore it to how it was originally conceived, i.e. a regional line, to maximize its regeneration potential in the entire South East of England. Nevertheless, it remains an important investment for London's mega-city region rail network, being a comparatively fast east-west link, due to limited stops, only five, in central London (Zone 1) served by commuter trains.

2.1.2 OVERGROUND

Overground is a less controversial project; its importance in urban regeneration and the necessity for Orbirail connections in the mega-city region in

general is discussed in Part I. London's Overground will deliver Underground style services which will be part of the Tube map. In November 2007 the TfL will take over the management of the North London Railway which is consisted of the North London Line (Richmond to Stratford), Gospel Oak to Barking line, West London Line (Clapham Junction to Willesden Junction) and Euston to Watford line which are all currently Silverlink services. The East London Railway which is currently known as the East London line will run from Dalston Junction south to West Croydon, Crystal Palace and New Cross when it will be reopened in 2010. By February 2011 the East London Railway
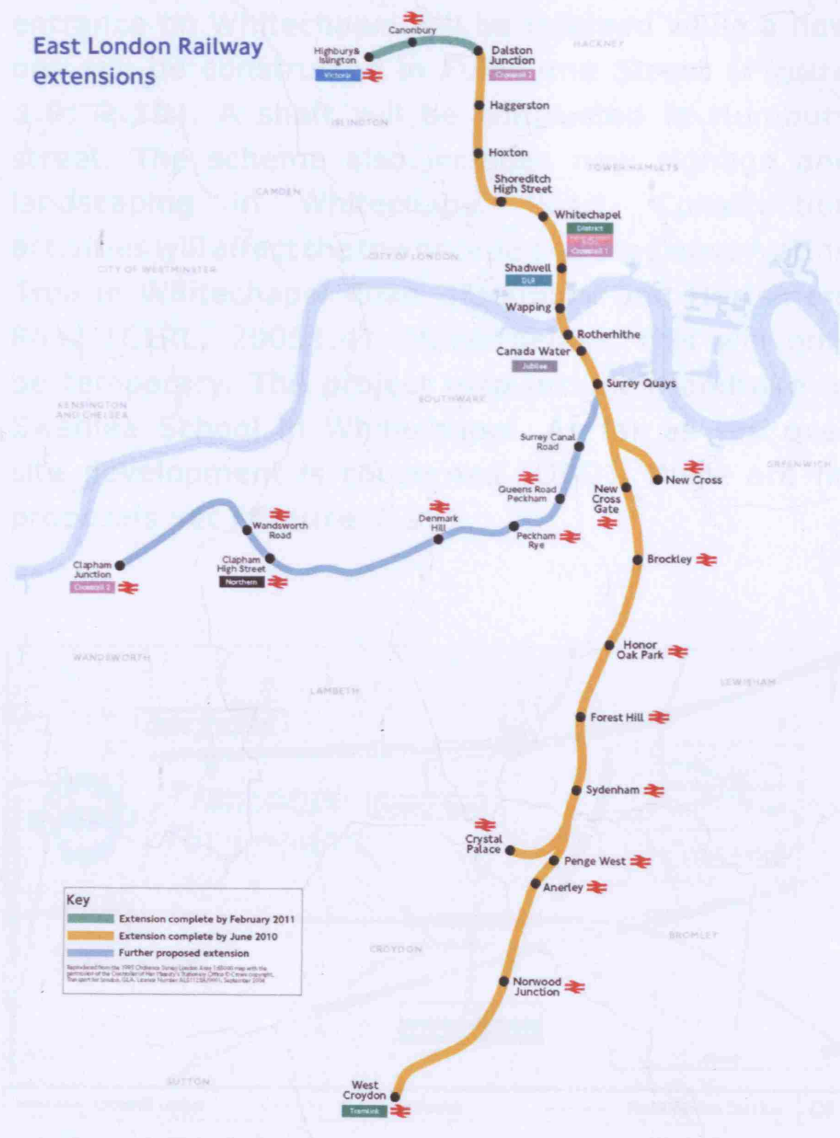
will be connected to North London Railway by a link between Dalston Junction and Highbury & Islington. Eventually the plan will form an orbital route around London. A total of £1.4 billion is being invested in the London Overground network. Of this, £1 billion is being spent on building the East London Railway (TfL, 2007) (Figure 2.8).

2.1.3 WHITECHAPEL STATION

There will be a new Crossrail station in Whitechapel which will be fully accessible and with full interchange between Crossrail, Overground, District and Hammersmith & City lines. The existing station entrance on Whitechapel will be retained while a new one will be constructed in Fulbourne Street (Figure 2.9; 2.10). A shaft will be contructed in Humbury street. The scheme also includes new signage and landscaping in Whitechapel Road. Construction activities will affect the townscape and the Conservation Area in Whitechapel Road, Handbury and Hertsmere Road (CLRL, 2005a:4). Nevertheless, this will only be temporary. The project also includes landtake at Swanlea School in Whitechapel. As far as the over site development is concerned (OSD), there are no proposals yet (Figure 2.11).
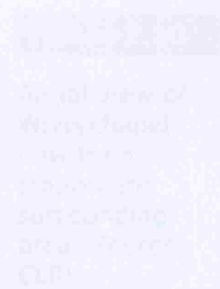

Figure 2.9

Location map of Whitechapel station and Handbury street shaft. Source: CLRL.

Figure 2.10

Aerial view of Whitechapel new train station and surrounding area. Source: CLRL.
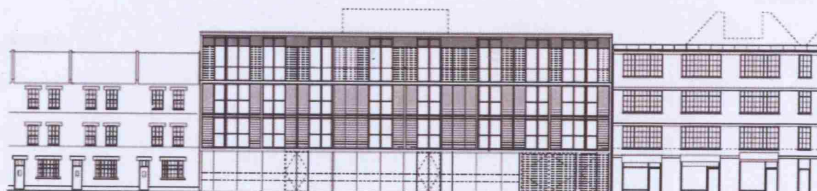
Figure 2.11

Illustration of possible over site development in Handbury Street. Source: CLRL.

HANBURY STREET
OVERSITE DEVELOPMENT
PRINCELET STREET ELEVATION

Whitechapel is an inner city area next to the City of London within the borough of Tower Hamlets (Figure 2.12). Whitechapel will assume critical importance in the London mega-city region after the realization of Crossrail and Overground Orbirail. In order to evaluate the impact of this major development one should study the present situation within the area as well as the future plans for it.

In order to evaluate the impact of future rail development on urban transformation, we should define the train station area. This is by definition arbitrary for the railway station as a place has uncertain boundaries. Luca Bertolini and Tejo Spit in an attempt to systematize the definition of train station areas conclude by outlining four approaches: the 'walkable radius', the 'functional-historical', the 'topographic' and the 'development perimetre' (Bertolini and Spit, 1998:12).
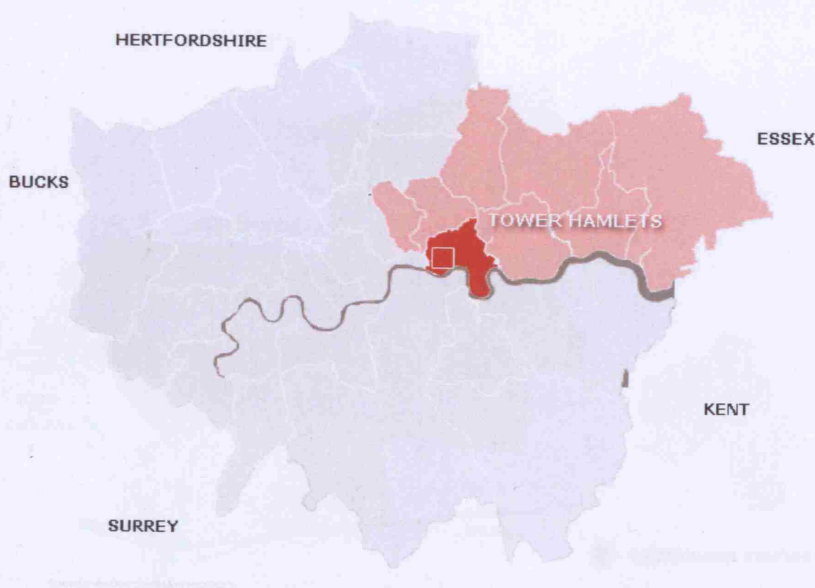
HERTFORDSHIRE

BUCKS

ESSEX

TOWER HAMLETS

KENT

SURREY

Figure 2.12

Whitechapel, Tower Hamlets. Source: Masen.

In the present case study I reckon that a walkable radius (i.e. 500 metres) and the functional element (i.e. the axis, Whitechapel Road connecting station and city centre) are the appropriate approaches in defining the train station area (Figure 2.13). Whitechapel station is situated on Whitechapel Road and in the intersection of three different wards, Whitechapel, Bethnal Green South and Spitalfields and Banglatown (Figure 2.14). Thus when referring to the Whitechapel train station area, for brevity's shake I will refer to as Whitechapel. However, a research difficulty occurs in the procession of data.
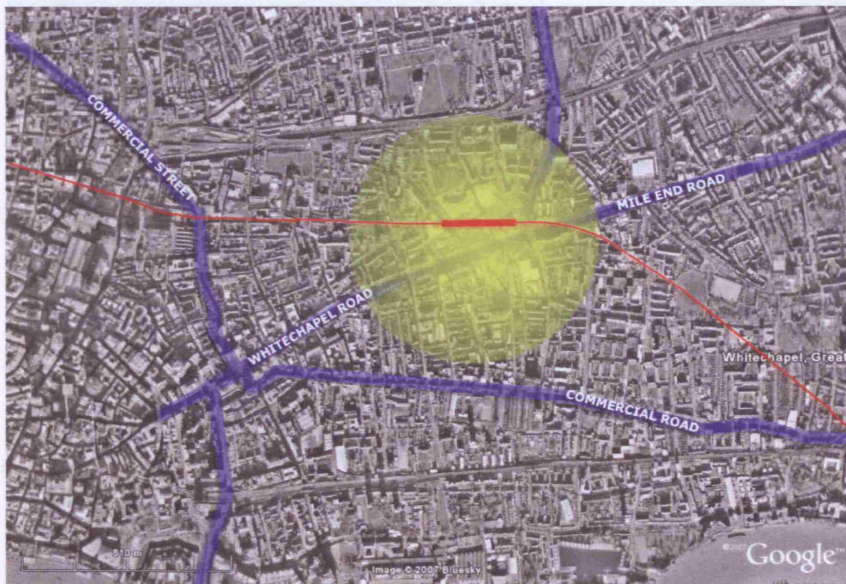
Figure 2.13

Whitechapel train station area. Source: Masen.
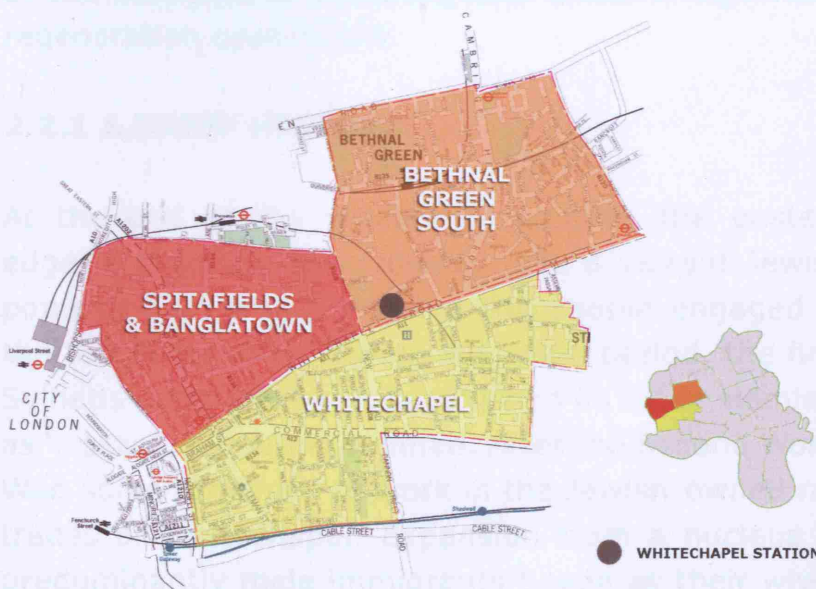
Figure 2.14

Whitechapel train station, at the intersection of three wards. Source: Masen.

Thus, a series of data on Tower Hamlets in general and Whitechapel in particular, is analysed below in order to fully understand the present situation in the area concerning economic activity, employment, ethnic diversity and living conditions. The data in question will be compared with the equivalent national or London data, where appropriate.

Tower Hamlets is one of London's smallest boroughs but it is one of the most densely populated and ethnically diverse, presenting great inequalities (Dench, 2006; Hamnet, 2003). Tower Hamlet's communities range from the vibrant Bangladeshi areas around Brick Lane to the affluent business and financial centre of the Docklands and the newly redeveloped residential areas along the waterfront. As Nicola Bacon says, "diversity in the East End has many dimensions: race, ethnicity, culture, class and faith. These overlap and interrelate" (Bacon, 2006:9).

Meanwhile, in the wider context, London is planning an extensive expansion, in an effort to reverse the historic imbalance between West and East. The Thames Gateway is an ambitious project and one of Europe's largest urban remodelling plans. In addition, the site of the Olympics in Stratford City offers a significant regeneration opportunity.

2.2.1 A BRIEF HISTORY

At the end of the nineteenth century the eastern edge of the City, Whitechapel, was a vibrant Jewish populated area with most of the people engaged in the textile industry. During the same period, the first Sylhetis population was established in Tower Hamlets as 'lascars', labouring seamen. After the Second World War, some remained to work in the Jewish-owned rag trades of Whitechapel. Expansion from a nucleus of predominantly male immigrants began as their wives

joined them during the 1970s. (Dench et al., 2006; Hebbert, 1998:172).

The Bangladeshi community has developed for the last 40 years alongside the white working class of East London. Their symbiosis has not always been without tension and conflicts (Dench et al., 2006). In recent years Whitechapel has seen an upsurge in the new middle class population and the area is once again undergoing a process of transformation, in fact a process of urban gentrification (Hamnett, 2003).

2.2.2 THE BANGLATOWN

According to the 2001 Census, ethnic minorities make up one third of Inner London's population. (Hamnett, 2003:112). The 1991 Census provided a better understanding of the geographical distribution of ethnic minorities within Britain, due to the introduction of a question on 'ethnic identity'. At the last Census, 48% of the Tower Hamlets population defined themselves as coming from a non-white ethnic group (Dench et al., 2006).

The largest, non-white ethnic group in the borough is the Bangladeshi population, comprising a third of Tower Hamlet's population, making it one of the largest single ethnic minority communities in London. Thus it is a strongly inward looking community as revealed by the significant concentration. The Sylheti community
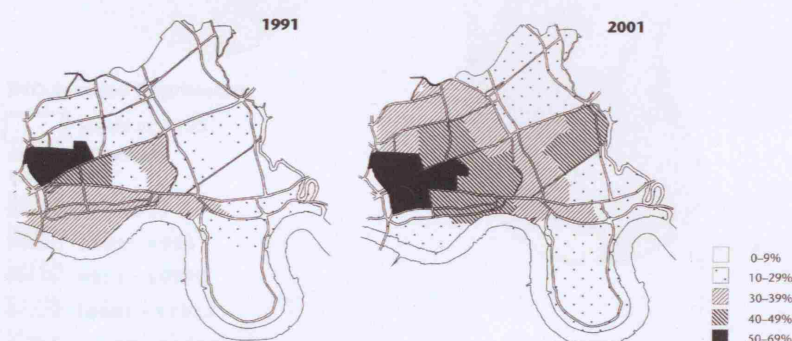
	0–9%
	10–29%
	30–39%
	40–49%
	50–69%

Figure 2.15

Concentration of Bangladeshi population in Bethnal Green South, Spitalfields and Whitechapel. Source: Dench et al.

of East London, mostly resident in Tower Hamlets, is the largest in the world outside Bangladesh (Dench, 2006). They are located mostly around Brick Lane, Spitalfields and Whitechapel **(Figure 2.15)**.

2.2.3 ECONOMIC ACTIVITY

The streets in the East End are busy and reflect a vibrant community but a comparative study of the statistics reveals a different picture. Tower Hamlets is one of the most deprived boroughs in London, scoring high on the Indices of Multiple Deprivation (IMD) (Tower Hamlets, 2005). Whitechapel area is ranked among the most deprived ones **(Figure 2.16)**.

Tower Hamples has an unemployment rate that is not only amongst the highest in London, but also across England and Wales. In fact, the overall economic activity in the borough is the second lowest in the
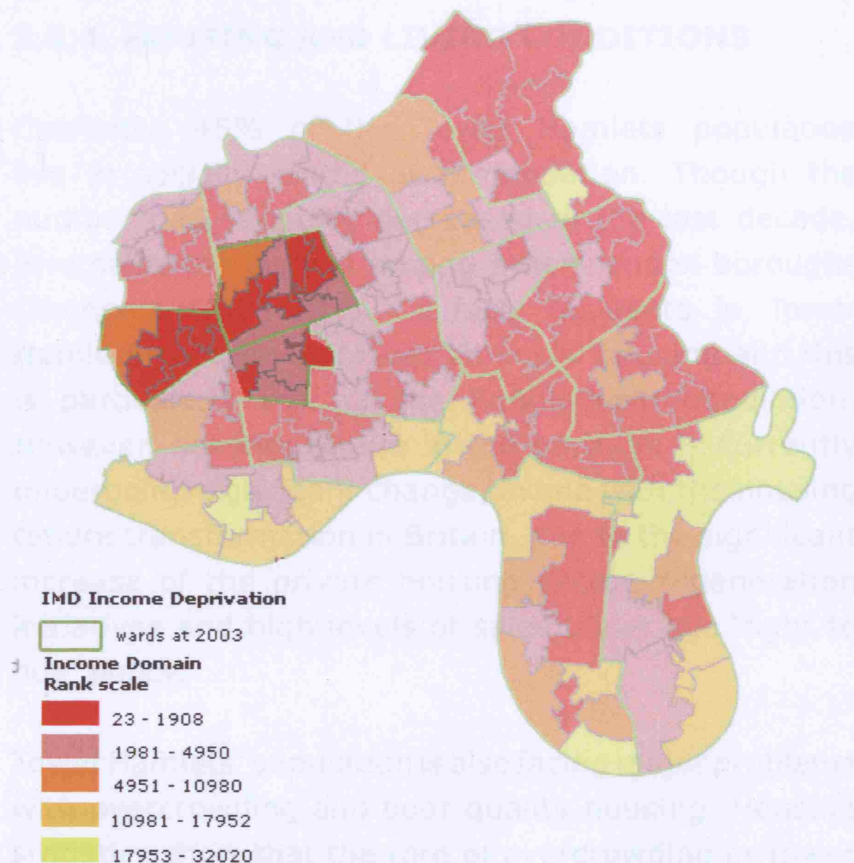
Figure 2.16

Deprivation in Whitechapel. The highlighted area shows the three wards (Spitalfields, Whitechapel and Bethnal Green South). Source: Tower Hamlets.

IMD Income Deprivation

wards at 2003

Income Domain Rank scale

- 23 - 1908
- 1981 - 4950
- 4951 - 10980
- 10981 - 17952
- 17953 - 32020

country (The Tower Hamlets Partnership, 2006:7). During 2005-06, of the economically active population, the unemployment rate was 12.8% for men and 12.5% for women. Therefore, a rise in employability is a key issue in the area.

In sharp contrast, in the financial district of Canary Wharf there is high economic activity, which contributes to average annual workplace earnings of almost £72,000, the second highest in the country, whilst the average wage for Tower Hamlets residents is just £25,000 a year. It is important to say that these high earners do not live in the area and, that, in fact, 25% of households in Tower Hamlets have an income of under £15,000 (The Tower Hamlets Partnership, 2006:7). Behind these figures lies a great deal of conflict; the poorest population live and work locally next to the increasingly affluent population of commuters and newly settled residents.

2.2.4. HOUSING AND LIVING CONDITIONS

Currently, 45% of the Tower Hamlets population live in socially rented accommodation. Though the number has seriously decreased in the last decade, it remains the highest among Inner London boroughs (Hamnett, 2003:137). In fact, residents in Tower Hamlets are heavily reliant on social housing and this is particularly true of the Bangladeshi population. However, housing tenure in the borough is currently undergoing significant change, in line with the housing tenure transformation in Britain, due to the significant increase of the private housing sector, regeneration initiatives and high levels of sales under the 'right to buy' policy.

Tower Hamlets' population is also facing major problems with overcrowding and poor quality housing. Housing statistics show that the rate of overcrowding in Tower

Hamlets is 14% compared to an overall London rate of 5% (Public Health in Tower Hamlets, 2007:29). In particular, overcrowding in council owned housing is the highest in London (24%). However, there are large variations in overcrowding rates across the borough. Whitechapel and its surrounding wards have the highest concentration as shown on the maps **(Figure 2.17)**.

7-13%
13-16%
16-18%
18-20%
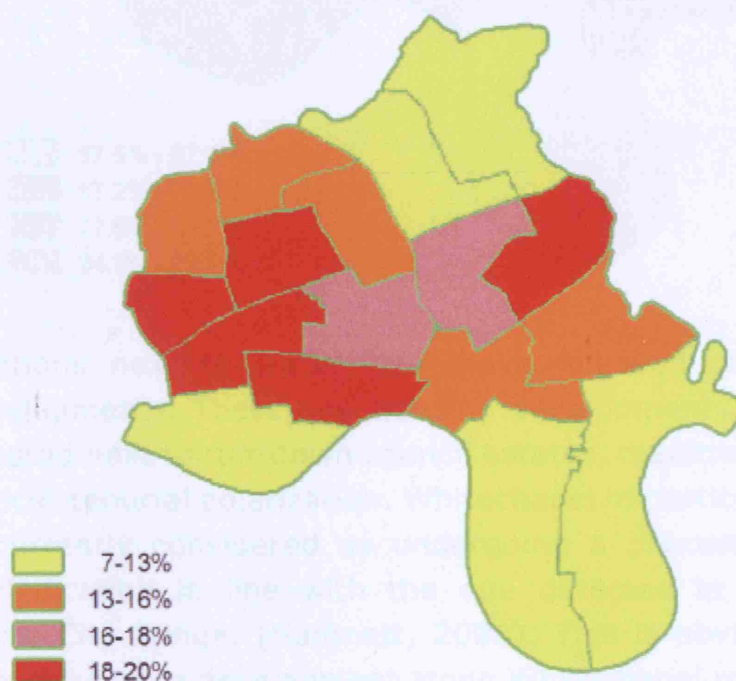
Figure 2.17

Overcrowding in Whitechapel, the highest percentage in the borough. Source: Public Health in Tower Hamlets.

The quality of the Council's housing stock varies. The Whitechapel area has a significant concentration of non-decent housing, though the percentage in each ward varies **(Figure 2.18)**. Moreover, ethnic minorities and in particular the Bangladeshi population can be found in poorer-quality housing or worse estates than the indigenous population (Dench, 2006; Henderson and Karn, 1984 in Hamnet p.123).

Nevertheless, for the first time Tower Hamlets is becoming an increasingly desirable place to live. New housing developments, particularly in prominent
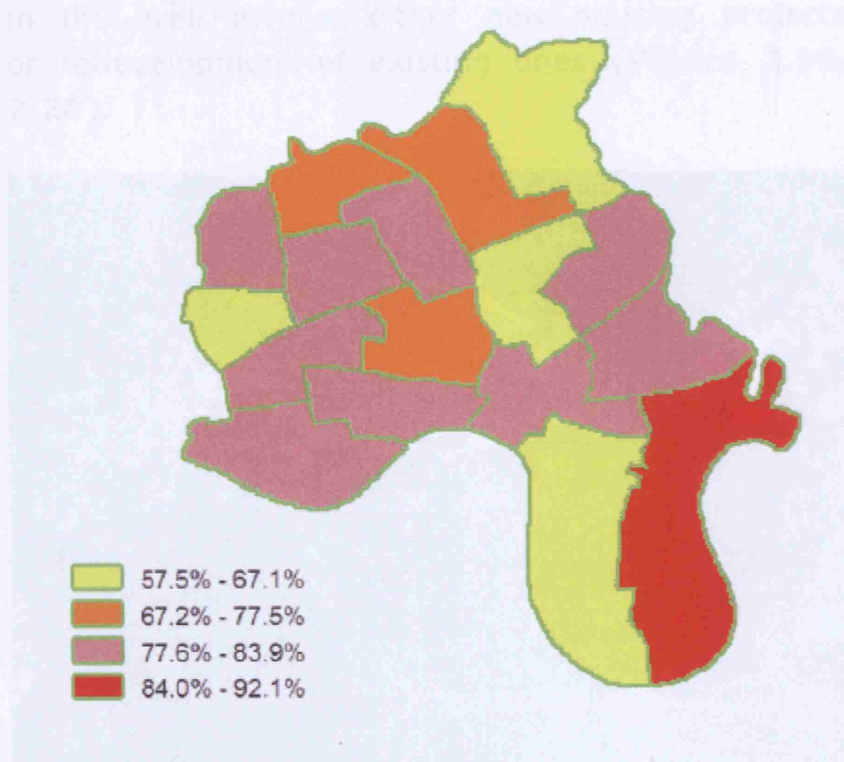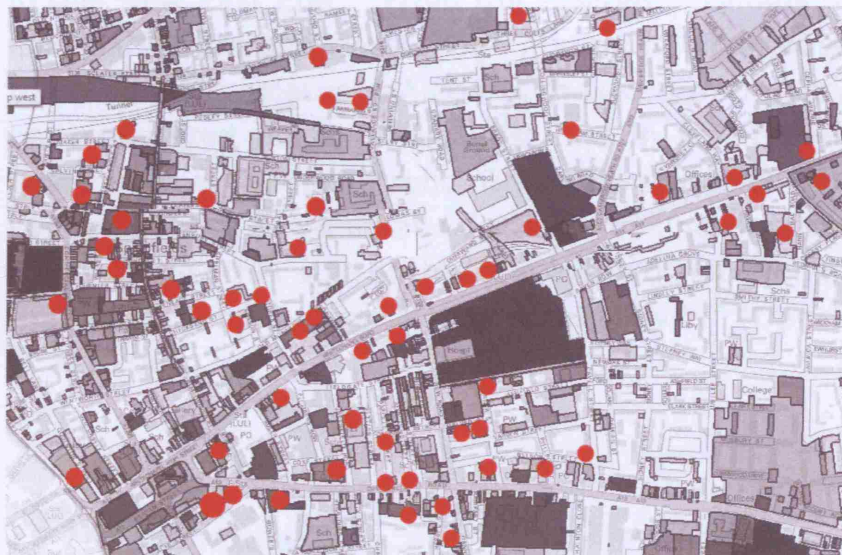
Figure 2.18

Whitechapel has a significant stock of non decent housing. Source: Public Health in Tower Hamlets.

57.5% - 67.1%
67.2% - 77.5%
77.6% - 83.9%
84.0% - 92.1%

locations next to watersides, have followed office developments. These new housing developments are situated next to run-down council estates, resulting in a socio-tenurial polarization. Whitechapel in particular is currently considered as undergoing a process of gentrification in line with the one detected in the entire City Fringe. (Hamnett, 2003). This is obvious in new housing development along Whitechapel road. In addition most of the recent planning applications

Figure 2.19

Planning applications in Whitechapel area. The highlighted buildings show new housing proposals, renovation and change of use for housing purposes. Source: Masen.

53

in the area involve either new housing projects or redevelopment of existing ones **(Figure 2.19, 2.20)**.

Figure 2.20

New housing project on Whitechapel Road. Source: Masen.

Tower Hamlets, and in particular the East End, has undergone a dramatic transformation characterised by rapid settlement of ethnic minorities, departure of many younger white families and inward movement of middle-class residents (Dench, 2006; Hamnett, 2003). This coexistence is reflected in the facts and figures shown above. The antithesis between the two parallel realities in Tower Hamlets is lucidly described in the 'New East End': "From the exalted pyramids of Canada Square and sleek urban marina of Limehouse to tinted glass palaces in Aldgate, the overflowing City had converted much of the East End in just fifteen years from a crumbling relic of Victorian squalor into London's most dynamic and forward-looking districts […]. But the other side of this coin is the dislocation of the old community, and loss of local activity" (Dench et al., 2006).

We shall examine future plans for the Whitechapel area and correlate them with the plans for the broader area (that is the City Fringe) for the impact of the new infrastructure, Crossrail and Overground Orbirail, are bound to be wider. The Borough of Tower Hamlets has produced the Local Development Framework which expresses the Borough's aspiration for the future of the area. In addition, Design for London and Transport for London also are currently undertaking projects in the area which are closely related to the potential development in this regard. These proposals are in line with the London Plan that renders Whitechapel as an opportunity area (Figure2.21).

2.3.1 ECONOMIC ACTIVITY

According to the Development Framework, the edge of the City Fringe "will be fully integrated with the

Figure 2.21

Opportunity areas and areas for intensification. Source: GLA, 2004:40.

☆ Areas of Intensification ★ Opportunity Areas ★ Whitechapel

City of London and the global economic functions"
(Tower Hamlets 2007a:28) (Figure 2.22). Therefore
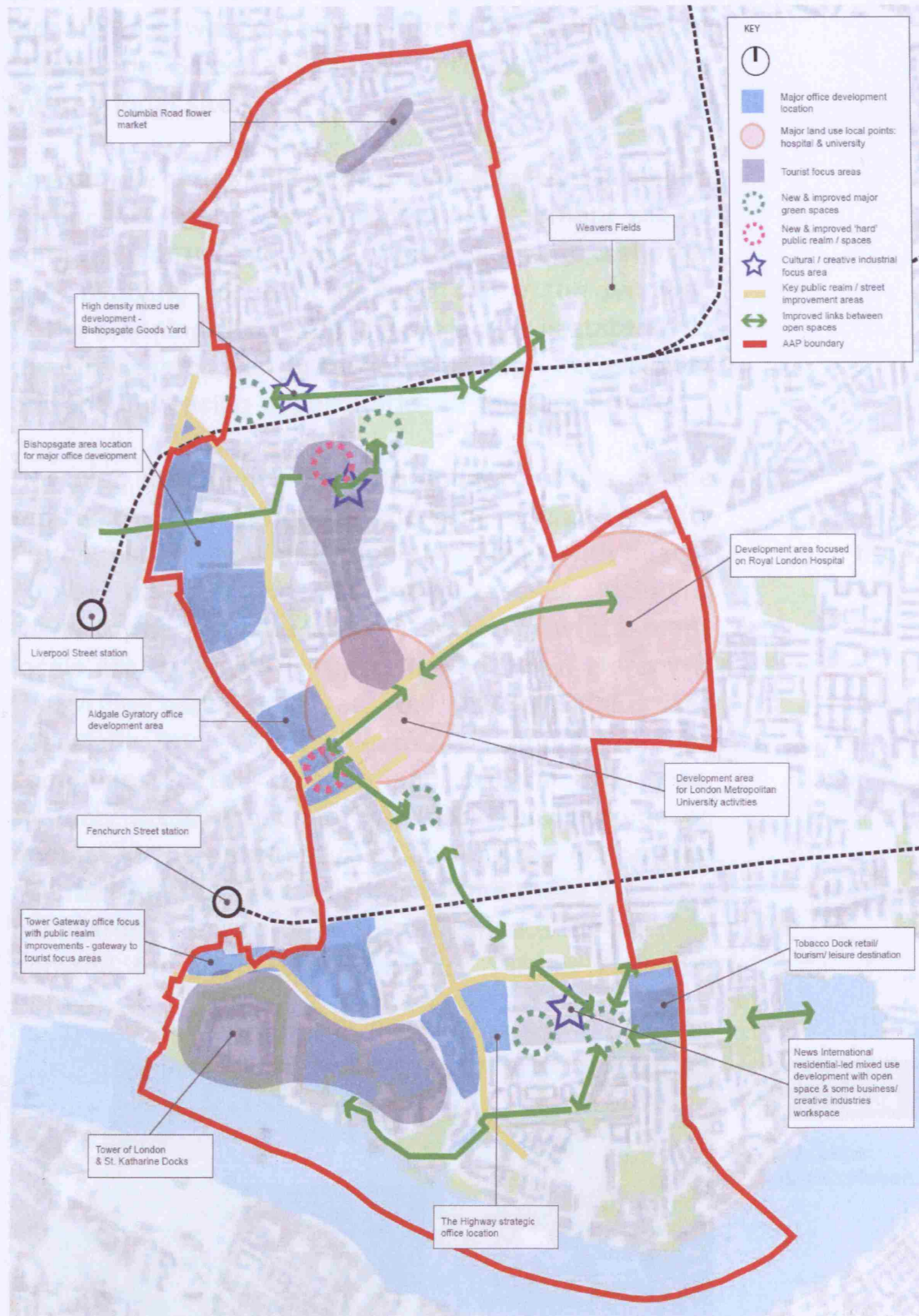a series of districts are identified as suitable for

Figure 2.22

Key diagram for the City Fringe. Source: Tower Hamlets.

KEY

- Major office development location
- Major land use local points: hospital & university
- Tourist focus areas
- New & improved major green spaces
- New & improved 'hard' public realm / spaces
- Cultural / creative industrial focus area
- Key public realm / street improvement areas
- Improved links between open spaces
- AAP boundary

Columbia Road flower market

Weavers Fields

High density mixed use development - Bishopsgate Goods Yard

Bishopsgate area location for major office development

Development area focused on Royal London Hospital

Liverpool Street station

Aldgate Gyratory office development area

Development area for London Metropolitan University activities

Fenchurch Street station

Tower Gateway office focus with public realm improvements - gateway to tourist focus areas

Tobacco Dock retail/ tourism/ leisure destination

News International residential-led mixed use development with open space & some business/ creative industries workspace

Tower of London & St. Katharine Docks

The Highway strategic office location

accommodating large-scale office development. This is due to the anticipated eastwards expansion of 'City-type office occupiers'. The total office area is estimated to exceed 5,000 square metres and will be located in Aldgate East, west of Leman Street, Tower Hill, west of Commercial Street and the western part of the News International site.

An example of this kind is the proposal for the Gardiners Corner in Aldgate East. The new development will be comprised of two high-rise office towers and a shorter one, involving closure of the south side of the gyratory. In the planning report for this project, it is stated that the site was chosen because of its high accessibility and the increasing opportunities in the City Fringe.

However, the Council has different aspirations for the rest of the City Fringe for the time being. The City Fringe, especially Whitechapel, is an area with a large number of small and medium businesses, including those in the third (voluntary) sector in which many locals are employed (Figure 2.23, 2.24). Moreover, the Whitechapel area (as well as Spitalfields and especially Brick Lane) is extremely popular among companies in the creative and cultural industries. In fact, these economic activities have become so popular in the area that the Central Area Action Plan (Central AAP) wants to further spread these activities eastwards in the borough to compensate for the high demand for affordable workspace (Tower Hamlets, 2007b).

**Figure 2.23
2.24**

Brick Lane.
Source: Masen.

Besides, Whitechapel is one of the borough's six district town centres and is situated on the east edge of the City Fringe (Figure 2.25). Whilst there is demand for retail units, discount and charity operators appear to account for a high proportion of this demand. The town centre is characterised by its vibrant market which has a large number of independent retailers, although the centre's main operator is Sainsbury's. Overall, the centre is doing reasonably well, but the general environment is a little run down (Tower Hamlets, 2007b:23). The borough assesses that Whitechapel town centre will benefit from the proposed Crossrail Station. The Council's aim for employment is the creation of 14,000 new jobs in Whitechapel which is in line with the overarching London Plan (Tower Hamlets, 2007a:8).

Thus, the Council wants to build upon the established tradition in the area and emphasizes the need to protect and promote existing local businesses while at the same time providing new affordable business premises. What is highly important in retaining the small-scale character is that employment opportunities must be given to local people including the Black and

Figure 2.25

The vibrant open market in Whitechapel Road. Source: Masen.

Ethnic Minority population, in view of the high level of unemployment in the area.

The cultural and creative industries cluster which is already strong in the area, is concentrated around Whitechapel and Brick Lane but it also spreads across many areas within the City Fringe. The council wants to reinforce this character by supplying affordable and flexible business premises. These economic activities are supplemented with the flourish of further cultural activities such as art galleries and performance spaces, which attract tourists and visitors and therefore contribute to the local economy. Leisure and entertainment activities are a further important element of economic activity in the area. In this respect, the Core Strategy supports evening and night-time activities in the Whitechapel Centre (Tower Hamlets, 2007a:30).

Finally, another important cluster in the area is health facilities associated with the Royal London Hospital on Whitechapel Road. The Framework also seeks to support the development of related uses in the area (Tower Hamlets, 2007a:37). The nodal upgrade will benefit London Hospital. In fact, a significant number of planning applications South of Whitechapel Road involves hospital related uses.

2.3.2 PROPERTY DEVELOPMENT

The west edge of the City Fringe has been identified as a key area for major office developments with a significant number of tall buildings. The key location for these developments is the area west of Leman Street and Commercial Street. The rest of the City Fringe is recognised as a historic inner city quarter of London with a great cultural variety which should continue to evolve as such. The Area Action Plan (AAP) is determined to preserve and enhance the

quality of historical sites and areas (Tower Hamlets, 2007a:47).

Crossrail, as well as Orbirail, will render the Whitechapel area highly accessible. Indeed, the borough's Development Framework recognises that "the delivery of CrossRail will be an extremely important planning consideration and regeneration driver in this area in the longer term" (Tower Hamlets, 2007a:57). For this reason, the borough will consider the preparation of a masterplan for the area around the Royal London Hospital, along Whitechapel Road towards Aldgate and the Whitechapel Gallery in order to manage physical and land use change in the area.

Apart from development issues relate to the Royal London Hospital, most new developments will be residential-led with an element of small business particularly along Whitechapel Road. Existing residential areas such as Handbury Street will be enhanced by major residential developments (Tower Hamlets, 2007a:57).

Additionally, the Development Framework introduces some basic design principles that express its will about the future image of the area. The most important of these are the retention of 'human scale' (3 to 6 storeys) and the overall improvement of the north-south crossing across Whitechapel Road and Commercial Road along its future commercial development.

2.3.3 URBAN QUALITY

Despite the existence of preservation areas and the proliferation of cultural activities the overall built urban environment is relatively poor and outdated. The Area Action Plan (AAP) recognizes this and proposes the creation of a new character for the area and thus the establishment of design principles for

future developments. This involves improvements to the local centre and public realm as far legibility and connectivity are concerned. According to the Development Framework improvements will also include enhancement to the quality of streets, through planting, surfacing and street furniture. It also makes Whitechapel Road a priority location for environmental improvements (Tower Hamlets, 2007a:37).

Michael Hebbert describes East London as 'schizophrenic' (Hebbert, 1998: 198) where deprivation is overlaid by high growth rates. Such a description is also true of Whitechapel and will become more obvious in the future as an outcome of planned developments. In the wider context of East London, Whitechapel's location coincides with the eastward trend of London's development and the infrastructure scheme discussed will act as a catalyst towards this trend.

As argued in Part I, rail transport and urban development is highly interconnected in the context of urban restructuring within the mega-city region. Every station according to its nodal role in the network attracts activities irrelevant to rail transport. In fact train station areas continuously gain in importance as prominent location for office development. It was also highlighted the importance of regional rail network and orbital rail links, to sustain growth in the mega-city region.

The Crossrail and Overground projects are bound to change Whitechapel's role dramatically. The nodal upgrade renders Whitechapel, where four rail lines intersect, a key location on London's transport map. In fact, only Paddington, King's Cross, Bank, Liverpool Street, Baker Street, Embankment and Waterloo have this number of intersections or more. Thus, although Crossrail is not a regional line as originally envisaged (unlike Thameslink) together with Overground it is bound to change the cognitive map of London, contributing to an irrevocable eastward shift of London's centre of gravity.

The importance of Whitechapel as a node lies in the link between the area and Heathrow airport and the link between the middle suburbs without the need to cross central London. However, perhaps the most significant element of the future development is that Crossrail directly links Whitechapel, with the City, Canary Wharf and Stratford, which together will be the future epicentre of London's economic growth.

Whitechapel area gravitates towards the City of London. The borough's plans (eg. The Local development Framework) promote this link (Figure 2.22) in an attempt to render the area fully integrated with the gentrified City Fringe and areas such as Spitalfields and Brick Lane (Figure 2.26). Additionally, the future project is bound to reinforce the axis between the two poles, the City and Canary Wharf. This is already obvious in the eastwards expansion of the City into the City Fringe. Consequently, development pressure in the area that lies between these two poles is unavoidable. In fact, one can go further and argue that a powerful triangle is being created (City, Canary Wharf and Stratford). The centre of gravity in this triangle is situated in Tower Hamlets.

Figure 2.26

Spitalfiels, a gentrified area within the City Fringe. Source: Masen.

It seems that Transport for London, in cooperation with Design for London has already identified the regeneration opportunity in these links, and together they are currently undertaking a project of street design (road improvement, street lighting, furniture etc) in the axis that links Whitechapel Road with Stratford. In line with future developments, the Local Framework also recognizes the need for a new Masterplan around Whitechapel Station. Although the Local Framework gives only general recommendations, it is assumed that there the direct consequences of Crossrail and Overground will be reflected first.

It is also possible that the area will become a battleground between different interests. Transport for London[1] highlighted the lack of funding which was only recently resolved for carrying out the project and thus recommended a funding process similar to that for the Jubilee line, meaning direct beneficiaries would contribute to the realization of the project. However, the Council, which tries to preserve the community's interests in the area, is in favour of a different kind of development for the area like the one reflected in the Development Framework. Moreover, it should be taken into consideration that the Mayor of London is likely to seek additional planning powers in order to support London's economic position in the global arena.

Since Whitechapel will become a major nodal interchange, developers are bound to respond by seeing this as an opportunity for office development, and this will have the support of TfL and the Mayor. The over site development (OSD) is quite possible to initiate this process. Although there has not been yet taken a decision on OSD, there is opportunity for a development of this kind (**Figure 2.27, 2.28**).

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1   The information was acquired through interview with David Ubaka, Urban Designer in TfL and member of the Design Review Committee for Crossrail.

Furthermore, in the area around Brick Lane there will be a culturally led development which will be more in line with the Council's aspiration for historic conservation, retaining existing leisure activities and encouraging CCI cluster. In addition, there will be further gentrification in line with that already

Figure 2.27

Fulbourne Street, here the entrance of the new station will be located. Source: Masen.

Figure 2.28

Whitechapel Road, these single storey shops will be located in front of the new train station building and will constitute a very likely place for redevelopment. Source: Masen.

observable.

Nevertheless the above discussed urban development will take time. Since the area is already densely built, though there is significant amount of empty land and land consuming uses in close proximity to the station, such as car parking. In addition local authority is willing to protect the interests of the local community.

In conclusion, the above discussed projects will result in changes in the social and spatial structure of the area. In addition they constitute a step towards the shift of mental map of London as Docklands did almost two decades ago. Today the area evokes the common image of 'one massive housing estate' (Hebbert, 1998:81). In the future it will be a more fragmented place at the micro scale and the implications of these changes for the lives and the opportunities of Whitechapel's population in terms of employment, incomes and housing will be considerable. Overall Whitechapel is an example in which the space of flows overwhelms the space of places.

OTHER EUROPEAN URBAN-SUBURBAN RAIL NETWORKS:
THE EXAMPLE OF PARIS, COMPARISON WITH LONDON

The epitome of the urban-suburban division is the network that serves the Paris mega-city region. The Parisian metro is a dense system of 15 lines that extend up to zone 2, with lengths varying from 10 to $20km^2$. The stations in the centre are all within walking distance **(Figure 3.1)**. The Reseau Express Regional, widely known as RER is the suburban network with 5 lines that all extend up to zone 5 and the length of the routes vary from 80 to 180km (including branches)[3]. The RER stations within zone 1 are limited in number and are served by larger trains **(Figure 3.2)**.
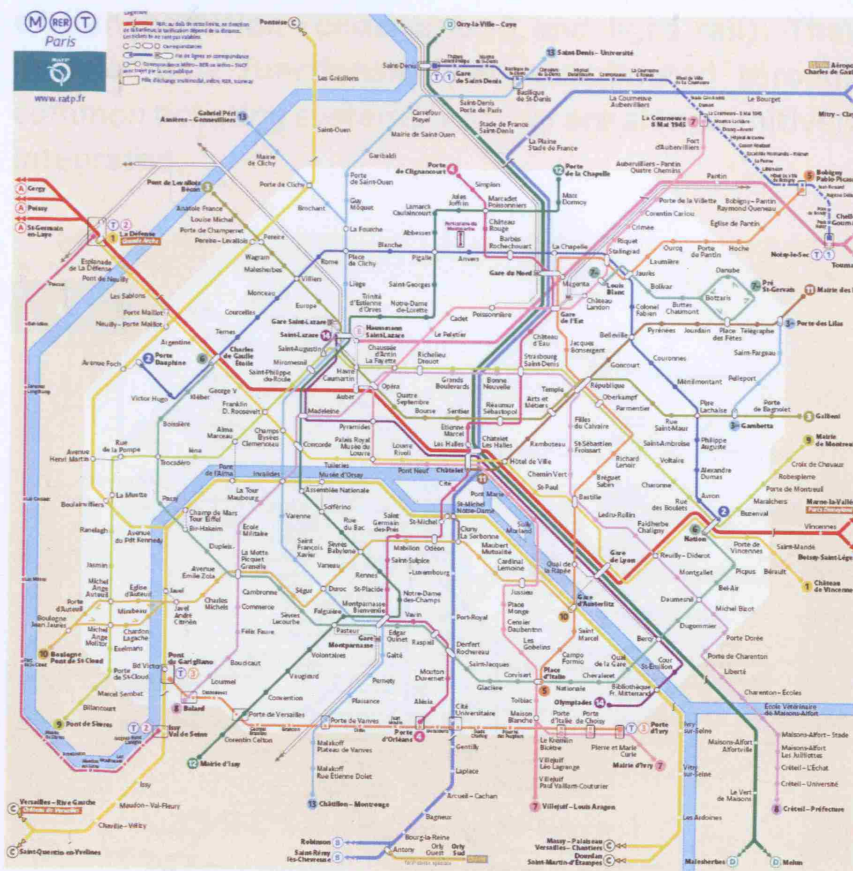

Figure 3.1

The metro system in Paris. Source: RATP, 2007.

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2   Information on distances derives from a commercial web site which has not been verified by academics (Cuevas, 2007).
3   As above (Cuevas, 2007).

The two systems, though separate, are highly integrated. The Regie Autonome des Transports Parisiens (RATP) the equivalent of Transport for London, is responsible for the operation of the metro. However, the operation of the RER is a cooperation between RATP and SNCF (Societe Nationale des Chemins de Fer) the equivalent of the former British Rail. Thus, the two systems together form a consolidated network which is additionally served by buses and tramways (RATP, 2007; SNCF, 2007). The German transport network, that is the U-Bahn and S-Bahn network, serving the German city-region is similar to the above cited urban-suburban system.

The advantage of both the French and the German rail networks consists in the quality of connection, the interchange between the regional and other forms of transportation (underground and light rail). They are not only functionally well coordinated through common ticketing systems but they are also cognitively integrated.
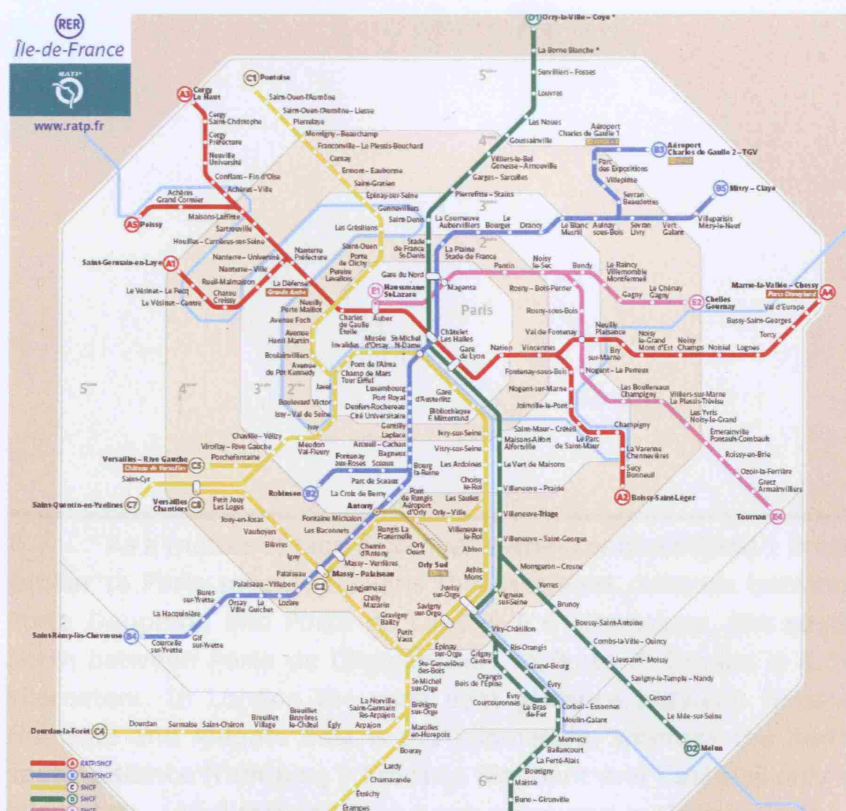
Figure 3.2

The RER system in Paris. Source: RATP, 2007.

Unlike the example of Paris, London's rail network is different in terms of scale, length and area that it serves and it is comparatively fragmented in terms of operation. Although in the literature (Bayliss, 1991:117) it is stated that RER is the equivalent of the regional network (Thameslink) this is not the case. In fact, London's first scale rail network, London Underground, is more similar to RER or S-Bahn, rather than the metro or U-Bahn, if length, distance between stations and infrastructure are taken into consideration. It is true that a comparison is not straightforward because London's inner city densities are lower than Paris or other European cities. Besides, even the definition of zones differs significantly[4].

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4   As a matter of fact, distances within London's Zone 1 is not similar to Paris zone 1. In Paris the east-west distance between Porte Dauphine and Porte de Lilas is 9.6 kilometres, the south north between Porte de Cligniancourt to Porte d' Orlıans is 8.34 kilometers. In London the west east distance between Notting Hill Gate and Aldgate East is 8.3 kilometers, whereas the north south distance from King's Cross to Elephant and Castle is only 4 kilometers. (All distances have been measured in Google Earth).

THE IMPACT ON NODAL UPGRADE IN URBAN DEVELOPMENT: 3 EUROPEAN CASE STUDIES/ EXAMPLES

One of the most ambitious projects illustrating the significance of transport development in urban restructuring is Euralille in Lille, France. Lille is a city of just 200,000 inhabitants approximately; nevertheless it is part of a wider poly-centric network that includes urban centres in France and Belgium. The trigger for the project was the perception that the Channel tunnel and the extension of the French high-speed network (TGV) were bound to radically affect Lille and upgrade its role within Europe. Thus, the new train station (Gare Lille Europe) was complemented with offices (World Trade Centre); leisure and shopping space; hotel; university and housing, constituting 70 hectare in total (Euralille, 2004). The urban design of the project was seen as vehicle for realizing the city's European aspiration; in this respect Rem Koolhaas was appointed the master architect of the project. Nevertheless, as critics maintain, this high profile station development, failed to deliver the expected benefits (Paksukcharern, 2003:25)

Zuidas in Amsterdam represents a different example. It is the case in which a nodal upgrade helps in the creation of a new tertiary CBD. The train station in Zuidas was a secondary station on Amsterdam's southern railway bypass, serving intercity and local trains, a metro line and a fast tram line. The decision to reconstruct the national and regional rail network in the Netherlands, with more national and international intercity links in Zuidas, rendered the train station as important as the central station (Bertolini and Spit, 1998:110). Zuidas, a former industrial land in the south edge of Amsterdam, thus became Amsterdam's new international business hub complemented with

university and recreation facilities which increasingly gain in importance.

Finally, as discussed in Part I new urban development around train station areas have also a symbolic character, representing the upgraded importance of the city region where they are situated. The most recent example that epitomizes this argument is Berlin's Hauptbahnhof, one of the largest double crossing stations in Europe, serving S-Bahn, regional and fast trains. The project is complemented by a large commercial development (15,000 sqm) that dominates the surrounding area. The new development is considered a symbol of the reunification of Germany and this has turned the train station into a tourist attraction (Deutsche Bahn, 2007) (Figure 3.3).

Figure 3.3

Berlin's Hauptbahnhof, a symbol of reunification. Source: Deutsche Bahn, 2007.

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